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ABSTRACT

A collection of working papers examining the underlying principles of language teaching, learning, and research includes the following titles: "Some Notes on Krashen's Learned/Acquired Distinction" (Stan Jones); "How Teaching Writing Can Affect One's Own Writing Process" (Toni Miller); "Sentence Combining: Some Questions" (Aviva Freedman); "Writing to Discover and Structure Meaning in the World of Business" (Graham Smart); "Linguistics and High Technology" (Jean-Pierre Paillet); "Second Language Student Placement through Self-Assessment" (Raymond LeBlanc); and "Cross-Cultural Variability in Conversational Interactions" (Trudy O'Brien). (MSE)

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Editorial Policy

Carleton Papers in Applied Language Studies is an annual journal of working papers examining the underlying theoretical principles of language teaching, learning, and research. The editorial committee invites the submission of previously unpublished articles focusing on new developments and recent research findings in the field of applied language studies. Of particular interest are such themes as approaches to communicative language teaching, syllabus design, pedagogical implications of research on writing, discourse analysis, and computer-assisted learning. While the editorial committee retains the right to select articles for inclusion in the *Papers*, it does not impose any copyright on those articles and reports which are published. Contributors are free to offer their work to other Journals or to publish separately.

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Some Notes on Krashen's Learned/Acquired Distinction

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One of the central questions in second language acquisition research is the status of second language competence and how it relates to first language competence. One of the competing theories, that associated principally with Stephen Krashen, argues that there are two different ways in which second language competence can develop. The first, which he calls *acquisition*, is a largely nonconscious process:

> Language acquirers are not usually aware of the fact that they are using the language for communication. The result of language acquisition, acquired competence, is also subconscious. We are generally not consciously aware of the rules of the languages we have acquired. Instead, we have a "feel" for correctness. Grammatical sentences "sound" right, or "feel" right, and errors feel wrong, even if we do not consciously know what rule was violated. (Krashen, 1982:10)

Second language *acquisition*, therefore, is much like first language acquisition.

The other process, *learning*, is the more familiar of the two, the one most of us experienced in the classrooms where we were taught second languages. It is a conscious process:

> We will use the term "learning" henceforth to refer to conscious knowledge of the second language, knowing the rules, being aware of them and being able to talk about them. (Krashen, 1982:10)

The *learned/acquired* distinction is crucial to Krashen's theory of second language acquisition; he argues that not only are the two modes of 'learning' different, but also that *learning* cannot be transformed into *acquisition*. Because this is the case, traditional pedagogies, which were designed to foster *learning*, are inappropriate.

Unfortunately, there has been considerable misunderstanding of the

nature of this distinction in the literature (in particular, McLaughlin, Rossman, and McLeod, 1983). Most of this misunderstanding has occurred because of the assumption that linguistic knowledge is of the same form as other forms of knowledge, such as knowledge of physics or automobile driving, and that it is obtained by the same process(es) as these other forms. Thus, *learning/acquisition* has been confused with such distinctions as *controlled/automatic* or *declarative/procedural*. It must be admitted that Krashen, himself, has not always presented the distinction as clearly as we might wish. He has presented the argument as if the conscious/nonconscious distinction were central; in my view this is simply the consequence of a more fundamental distinction, the distinction between linguistic knowledge and other kinds of knowledge. I do not believe they are the same.

Were linguistic knowledge like these other forms, then the arguments against Krashen, particularly against his claim that *learned* cannot be transformed into *acquired*, would have considerable weight because there is ample demonstration that *controlled* can become *automatic* and that *declarative* knowledge can be the basis for *procedural* knowledge. However, the dominant understanding in linguistics is that linguistic knowledge is *not* like other knowledge, either in form or in acquisitional process. It is certainly this linguistic assumption that underlies Krashen's theory. (For the most recent, generally accessible argument that this linguistic assumption is not only a plausible one, but the *most* plausible one given our current knowledge about language, see Newmeyer, 1983.)

Linguistics assumes a system of linguistic knowledge and acquisition something like the following. There are three components of that system that are central to the argument:

1) **Linguistic competence.** This is knowledge about the grammatical structure of the language and how grammatical structures are paired with meanings. It does not include: knowledge of which meaning is most likely in a given context, or which form is socially appropriate in a given context, or which form is most likely to be most effective, or any other factor not solely concerned with grammatical form.

   Thus, it means exactly what Chomsky, in *Aspects* said it means. The rules of linguistic competence are quite abstract, not simple summaries of surface structure regularities. Thus, they are not easily related to particular occurring forms or utterances. It must be noted that linguistic competence does not include everything systematic about language, only those things relating to knowledge of linguistic structure. This is also not to say that there exists a clear and unambiguous criterion for deciding whether any particular linguistic phenomenon is an instance of linguistic competence or of something else;

the resolution of the status of such boundary phenomena is part of the theoretical work of linguistics.

2) **Linguistic production.** This component uses linguistic competence along with other knowledge (what the user wants to say, socially appropriate form, rhetorical function, etc.) to produce utterances. The crucial assumption is that it is designed to use linguistic/grammatical knowledge only as it is organized in linguistic competence and not in some other form. Thus it is designed to work with quite abstract representations, not with representations close to surface structure. It is distinct from linguistic knowledge itself.

3) **Language acquisition device (LAD).** This system of learning is not a particular instance of some more general learning capability, but a specific system designed to do but one job: acquire linguistic competence. It is designed to derive from the raw data, the utterances of the language, the abstract representations necessary for the linguistic production system. It is not designed to work with metalinguistic representations of the language; and so, it cannot derive the necessary abstract representations from the summaries of surface structure features given as rules in all teaching grammars. It cannot even make use of the somewhat abstract representations which some teaching grammars based on transformational grammar provide. It 'knows' only how to work with raw data.

This, then, is the heart of Krashen's distinction between *learned* and *acquired* competence and the basis for his claim that one cannot be transformed into the other. It is not that one is "conscious" and the other is "nonconscious" that is the key. *Acquisition* is nonconscious because it makes use of the LAD which learners are not able to draw into attention. *Learning* is conscious and it might well become automatic in McLaughlin's sense, but never in the sense that first language competence is automatic.

Since the LAD cannot turn surface summaries into abstract representations and since the linguistic production system can only use abstract representations, the surface summaries that are the essence of the learned competence cannot be used by the linguistic production system. Instead they can only be used to revise the products of the production system, to function as a monitor of linguistic form, just as Krashen claims. Acquired competence is just that competence that results from the working of the LAD, learned competence is that which results from being taught metalinguistic summaries. Certainly, such superficial rules are part of the first language linguistic ability of every speaker, but they are only a minor part of that ability. For many second language speakers, they are the principal part of second language linguistic ability.

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How Teaching Writing Can Affect Our Own Writing Process

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Introduction

Several years ago, while doing graduate studies in English Literature, I had the opportunity to work as a tutor for Carleton University's Writing Tutorial Service. The experience had many benefits—the least expected, however, and yet the most enduring, was the degree to which it affected my own writing process. Suddenly I found myself creating richer, better structured, more articulate papers.

The transformation, nevertheless, was not an easy one. There were many false starts, stops, and even regressions. At first I became so overwhelmed by my exposure to the teaching of writing as processed-centred rather than product-centred that the very act of putting pen to paper became an awesome one. The trouble was not so much in the "what" to say, but more in the "how." I was paralyzed by the endless possibilities, by the esemplastic nature of language, the many semantic changes that could be made on the word, sentence, paragraph level, and on to the first through to the last draft. Indeed, the heightened self-consciousness and the heady power that came of being able to name the facets of the writing process did more to discourage than encourage fluency.

Yet as the academic year progressed, strategies which I introduced to my students such as writing to discover one's meaning, using talk as a heuristic, and allowing for incubation periods between drafts provided valuable litmus tests which helped to feed and support my own efforts. And eventually my many stops and starts bore fruit. It all seemed to have been a part of a necessary stage of growth—a certain Piagetian decentring of the self—during which time the heuristics enabled me to move out and beyond myself, to view things from others' vantage points and to see things not just for what they were, but more significantly, for what they might be.

Soon I began to wonder if this was the case for other tutors as well. Consequently, I decided to conduct a study investigating potential changes in the attitudes and processes of three of the next year's tutors. The following, presented as three separate case studies, is a synopsis of my findings.

Background

The three tutors involved in this pilot study were all female volunteers, and graduate Fellowship students who were required to do a great deal of writing as part of their course work; otherwise, they were from totally diverse backgrounds. One was a "mature student" with grade nine education, another had been an R.N. before attending university, while the third had a solid academic background with courses in linguistics and the "writing process."

At the beginning of the academic year the tutors attended a workshop as part of their training for the Writing Tutorial Service during which time they were given an introduction to the theory of creativity, the composing process, recent research findings, as well as a bibliography outlining the most pertinent studies in the field of writing (Freedman, 1984). Then, with theory in hand, the tutors were in a position to explore the pedagogical implications and begin to apply them to the various writing problems students may have.

The subjects were first interviewed after this training session, but before they began their teaching duties, and then again several times throughout the school year. Each tutor's profile is prefaced with a description of her socio-economic background as well as a summary sketch of her personality. Included also are their initial thoughts and feelings about being a tutor because I believe their responses would reveal, to a great extent, what they considered the act of writing to be, thus helping to flesh out their personal writing profiles. All in all, what quickly became apparent as the tutorial year progressed was that the teaching of writing can and does affect our own writing process—regardless of one's own particular level of discursive maturity.

Tutor Profile #1: Brenda
Socio-economic Background and Personality Profile

Brenda came from a blue collar background and was the first of her family to attend university. She left high school at the end of grade nine and after a varied work history, which included everything from driving a tractor-trailer to working as a medical secretary, she entered university as a mature student. She completed an undergraduate degree with a

major in English and a double minor in Sociology and Psychology, and then enrolled in an M.A. programme in English.

There was little emphasis placed upon reading or the exploration of ideas in Brenda's home life and very few things were "givens": she was responsible for creating her own centre of academic reference. She was truly self-made and justifiably proud of it. Yet, perhaps because of her difficult self-genesis, she tended to be untrusting of others, and even somewhat rigid in her views. At first she was reluctant to talk about the content of her writing, to share her "ideas." To a certain extent this was because of the "unfriendly" atmosphere she encountered at the last university she attended. However, it could also have been due to the fact that Brenda had to work so hard to develop her own ideas that she was either unwilling to share them, or did not really trust her own authority, and consequently did not want to expose herself to criticism unnecessarily.

Writing Process Before Tutoring

Brenda was fairly confident about her own writing capabilities but was at a bit of a loss when asked to articulate what she thought it would be like teaching others. "How the hell can you tell anyone how to write?—I guess perhaps by starting with the thought that everyone needs confidence." She found no aspect of the writing process any more difficult than the others. She did, however, require as much time as possible for each assignment (eg. six weeks for a fifteen to twenty-five page paper).

Once she decided upon a topic, she did extensive research of the primary and especially of the secondary texts—often writing out large chunks of the critical texts "verbatim." This seemed to be the formula she used to give shape and sense to her own ideas. Not particularly confident about her own powers of selectivity, nor her ability to formulate theories, she needed to amass a great deal of "what others have to say." Indeed, it was perhaps a way not only for Brenda to acquire ideas, but also to find the appropriate clothing, or vehicles for the expression.

After having amassed "reams of notes" she took them through several reduction processes and shaped, selected and organized her material to meet the needs of her topic. Eventually she made a "sketchy outline" indicating relevant supporting material. Then she allowed the material an incubation period of several days.

By this point, three-quarters of the time allotted to the essay had been given over to the generation and exploration of ideas. Then she would start the actual drafting, writing long hand and double-spaced. She could not really state the usual number of rough drafts she wrote, but knew that she spent a lot of time making a myriad of changes from the word level

to the actual structure of the piece itself, and would "cut and paste" when warranted to improve the overall meaning. Once the good draft finally evolved, and still working long hand, she turned her attention to mechanical changes such as spelling and punctuation. Then she typed up her draft, making no changes at this stage, and finally the paper was ready for submission.

What Tutoring Taught Brenda About Her Own Writing Process

Through talking and working with her students, helping them become more aware of different writing strategies, Brenda suddenly realized that the amount of work she put into a project was not really "goal-directed." I sat there and thought, "what am I copying this page verbatim for when I don't even know what it says—and all because I think it might be important." She decided to "take a chance and not do as much research. It's fantastic! It really is! I have more lists now, it's taking more time because I'm being more cautious that I don't leave anything out and because I am changing my method. Before, I'd get at least 70 pages of notes before I would even say there *must* be *something* in there?! It's a more aggressive approach. It's no longer getting all these quotes—and then having to pad around them."

As a result of encouraging others to actively engage with their material and to have confidence in their own thoughts and intuitions, Brenda realized that she needed to heed her own advice. By the end of the school year she felt more satisfied with, and more in control of her writing. She spent less time needlessly copying chunks of prose. And rather than amassing pages of notes per text, she had only four or so more meaningful ones.

Faced with having to do a new assignment, the research for her thesis topic, she did, however, momentarily regress. "With the first critical text I wrote it out word for word. I had almost thirty pages of notes." Nevertheless she recovered quite quickly and "with the next few books I became more selective: I tried to make general statements with a few quotes." When last I spoke with her, she was very pleased and confident that her thesis would be finished well within the deadline that she had set for herself.

Tutor Profile #2: Joan
Socio-economic Background and Personality Profile

Joan came from a middle class background and was one of the first of her family to attend university. As a child she was encouraged to read and use the local library although there was not a great deal of attention

paid to the exchanging of ideas, nor to writing. After high school she became an R.N., worked for a year, and then decided to attend university with the intention of eventually teaching nursing. During this time she studied philosophy and English and "loved it." She went on to complete a degree not in Science but in English, and then went on to do a M.A. in Canadian Studies, focusing on Canadian literature and history.

Joan was a dedicated worker, though not particularly self-confident: she always seemed to feel the need to apologize for, or qualify her statements. Nor was she given to acting spontaneously. She approached life and new ideas with great caution and, on the whole, felt safer acting methodically and operating within a highly-structured frame of reference.

Writing Process Before Tutoring

Joan liked writing but found it difficult—"it doesn't pour out, I almost have to be forced into doing it." Nor did she ever really feel in control. More often than not she was haunted by the nagging question: "Will I ever be able to get something completed?" She greeted the prospect of teaching writing with the thought that "When you teach something you can't help but learn." She was afraid, however, to deal with the question of grammar. Her knowledge of grammar was intuitive; therefore she bought several grammar and composition books hoping to "bone up," but found them "too boring to read." She set the books aside and decided that if she was unable to help her students see their problems *then* she would "give them something *they* can read."

Once Joan selected her topic for an assignment she began her research by examining primary and secondary sources, guided by her topic choice. Each notation was written out in full sentences and accompanied by the appropriate page number. After her research was completed, which normally took two-thirds of the time allotted for the assignment, she transformed her notes into a highly formalized outline, beginning with a thesis statement and followed by supporting points and quotations.

Eventually she turned the outline into the first and *only* draft. She wrote longhand and single-spaced, and had to start with the first paragraph of her introduction. As she proceeded she waited for each ideal word, phrase, sentence and paragraph. After much labour the piece was ready to be typed and at this point she did little or no correcting save to add or delete a line.

What Tutoring Taught Joan About Her Own Writing Process

Several months into the school year Joan admitted, "I have a fairly orderly way of approaching writing and I know it puts a lot of pressure

on me." It was not until she was faced with an assignment in a new discipline, however, that she felt the need to abandon some of her old writing strategies. The task was to compare a biographical to a narrative account of history and it was her responsibility to decide which of her findings were pertinent. There were no critical texts to turn to and she found herself "collecting a mass of notes" and "paralyzed by all the information."

Forced to chart her own territory, she decided that her only option was to begin writing in order to discover what it was she wanted to say. It was, indeed, a case of Britton's "shaping at the point of utterance" (Britton, 1980:24). First she tried to list all the points that interested her and then she narrowed her focus to two areas. This then became a "sketchy outline"—a very different approach compared to the highly-wrought product she was used to producing.

With this done she thought, "I'll just start writing again and see what happens." Not prepared to throw all caution to the wind, she continued to single space her writing but she no longer waited for the "right word." If something displeased her, her internal editor merely underlined things she felt were awkward at the time. "I had to keep saying to myself, this draft you are just working on ideas." All in all, she "was surprised it turned out so well—it still needs polishing—nevertheless, I've never written an essay so quickly." Nor had she "ever had an essay this far along with a week to go. I'll put it away and then come back to it."

Soon this change in writing strategies began to spill over even into familiar territory for Joan. In attempting to develop a thesis for a lengthy Canadian literature paper she "sat down and tried to write out some thoughts. It was very helpful and I was very excited about it because I had never done this for an English paper before." She started keeping a journal of ideas for this new paper because "I guess I was so overwhelmed with what I had to do, and there were so many conflicting ideas, I thought at least I'll be keeping track of my own questions."

Committed though she was to her new writing strategy, Joan felt it had not worked for her history paper and she was "not sure why." Ultimately, when written for a university course, the measure of a paper's worth is in the mark it receives. In this case it received a B rather than an A. Needless to say, there could be many reasons for this result. Perhaps the paper was awarded less than she had anticipated due to insufficient time dedicated to the exploration and organization of her ideas, and the failure to present them as cogently and precisely as her professor desired. Then again she may not have been aware of all the rules one must follow to give a discipline, in this case history, its desired written identity. The acquisition of a new discipline, as we have come to realize, particularly

with recent research tracing the performance of first-year law students, is a highly complex affair. The writer has to make many, many decisions, adjustments and assimilations on the conscious as well as the subconscious level. (Freedman et al. forthcoming). Indeed, John Dixon succinctly states the case when he says "certainty about language is, in a sense, certainty about experience" (Dixon, 1974:93).

Regardless, instinctively Joan realized that she was breaking new and valuable ground. She persevered and continued to keep a journal of ideas for Canadian Literature. Just like Brenda, by the end of the tutorial year Joan felt more in control of her situation and she intended to keep recording her ongoing thoughts because "it forces you to clarify and to see your problems."

Tutor Profile #3: Anna

Socio-economic Background and Personality Profile

Both Anna's parents were professionals whose mother tongue was Polish. By her account, she spent an almost idyllic childhood—a time filled with reading, poetry and music. Writing had always been an important part of her life as well, and for as long as she could remember she had kept a diary and written poetry. In high school she took extra courses in writing, and her undergraduate work was in English and Linguistics. Before starting her M.A. programme in Canadian Literature she spent two years in Africa with CUSO teaching ESL.

Anna was a very conscientious student. Articulate and perceptive, and highly committed to conversation, she was always more than ready to explore ideas, the particulars of her individual courses, and the nature of her writing process. She had an eclectic nature and more so than the other tutors, her main motivation seemed to be her insatiable curiosity for knowledge.

Writing Process Before Tutoring

Unlike the other two tutors, Anna had taken an undergraduate course with Dr. Aviva Freedman exploring the writing process. Because of this experience Anna was very conscious of the complexities and the links between reading, thinking and writing. In the past she had always kept a diary, but after taking the above course she felt she had been given "permission" to expand it into a journal in which she could explore her ideas. She was anxious to be a tutor and wanted the opportunity "to bring out things students have" and make them "more aware of the process." She felt that it took a long time to "gain control of her own writing," and as a tutor she could "aid in giving others this direction."

In general, Anna was fairly confident about her writing. However, to write effectively she had to have the following—as much time as possible, and the tension that is created by a deadline. Unlike the other tutors, she mentioned that her topic choice was always guided by the professors' preferences, which she gleaned through deduction and intuition. In fact, Anna had a heightened awareness of her audience—a crucial dimension of effective writing and often one of the last to be acknowledged and developed. She spent a great deal of time discussing with me what she felt her professors and the individual disciplines required of her, struggling to articulate her thoughts so that they would best suit those expectations.

After her topic was chosen, Anna turned to her primary text(s). During her first reading she normally made notes and, guided by her topic, marked relevant passages. At the same time she jotted down pertinent thoughts that came to mind. Nor was this an exercise that was limited to just her "writing time": she was well aware that her topic could pop into her mind at any moment and tried to be ready to record whatever suddenly and consciously surfaced from her creative unconscious. Therefore, "even a tiny, yet pertinent scrap of paper" might be added to the "pile" of information that she gathered for an assignment. She rarely went to secondary sources, and then only after most of her thoughts on the topic had jelled.

Once her research was completed, Anna went back and re-read her notes and the marked passages with the purpose of establishing some sense of direction. Ideally, the material suggested its intended sense and shape. Then she wrote not a point form outline, but more a sketch of her intended thesis and the areas she would cover. She wrote long-hand, double-spaced, and had to start with her introduction as her "way into" her material. Even if this introduction was eventually scrapped, it was a necessary exercise, an outline, that helped her chart the territory she intended to cover. Finally, Anna wrote as many drafts as she thought were necessary and would even make changes—mechanical as well as structural —while typing the final product.

What Tutoring Taught Anna About Her Own Writing Process

By the end of her tutorial year Anna could point to two major changes in her writing process. The first was that she tended to give her drafts more incubation time. She had allowed for some such time in the past (although it is noteworthy that it was not something she mentioned as being a part of her writing process at the beginning of the year), but now, as she says, "I see the degree of time as being more important." And second, "because of being more conscious of the writing process, I feel

I've been more successful in separating myself as writer from myself as critic." For instance, there were times when I'd think, "Oh! that doesn't sound right" and would immediately attempt to revise, thus jeopardizing the flow of creativity. Or she felt somewhat inhibited and "just didn't allow myself to engage in writing to discover. Now I just aim to get there, to write to a certain point and then go back and look at it critically."

On the whole "I write a bit faster" says Anna, "but the process is longer—I spend more time and they are better papers." Nevertheless, after her year as a tutor, she finds writing an even "greater burden" now. Other than wanting "to succeed and do an ultimate job," there is also the added dimension of being "more aware of the complexities involved. And I think of the time you spend, of the possibilities for people coming here to the Writing Tutorial Service—and then you start to think of the possibilities for yourself—it snowballs!"

Conclusions and Implications

We can see then, that as a result of teaching writing, each tutor did change her writing process significantly. And it was the experience gained teaching in the tutorial service that afforded the tutors a greater mastery over their craft.

Brenda soon realized that writing is, in fact, a thinking process and that she needed to have more faith in her own thoughts and feelings, her own responses. Therefore, rather than continuing to construct essays out of masses of notes she had copied "verbatim," she began to rely upon her own academic centre of reference. And even though active engagement with her material seemed to require more of her, it was not resented, but viewed rather as a necessary part of the new-found control that previously seemed to elude her.

Similarly, Joan recognized that her writing process failed to get at the heart of the matter—to put herself in touch with her own vital nexus of thoughts and feelings out of which effective prose must grow. She abandoned some of her old writing strategies which "put a lot of pressure" on her, such as developing a rigid outline, and demanding of herself a perfect, first and only draft. Instead, she began to keep a journal of ideas, to free-write, and brainstorm, thus allowing herself to discover and explore what it was she wanted to say.

Even Anna, who had, as Don Murray would say, "the feel of writing," (Murray, 1980:67) felt the need to change her writing process. In the past she had a tendency to prune her writing before it had been allowed to take shape. Interaction with her students, however, emphasized the value of letting one's work reach a certain maturity before critically analyzing

its content. As well, she provided for longer incubation periods between drafts, thus distancing herself from her writing and making for a more objective view.

In turn, our analyses of the changes that took place in the writing of these three tutors over the year also led us to make some further, more general observations. First, it is clear that there is no one correct approach to writing. Each tutor had an individual style, continued to develop her own repertoire of writing strategies, and yet managed to successfully meet her course requirements. Indeed, our own frame of reference, our individuality, usually determines the choices we make on the macro as well as the micro level: to a great extent what and how one writes is a reflection of who and what one is. This then leads us to ask whether or not there might be a correlation between a particular personality and the quality of writing being produced. For example, did Anna write rich, articulate prose because she had an eclectic personality, because she enjoyed, to paraphrase the poet Tony Connor, "creating a jungle and then exploring it"? (Murray, 1978:87). And will future research actually reveal a correlation between a particular personality or psychological type and preference in writing strategies? For instance, would an "extravert," to use Jung's categories, be more inclined to free write and brainstorm than an "intravert"? Or would it depend upon the task at hand and the nature of the discipline? These and many other questions remain unanswered. What is apparent is that it is imperative to view writers as individuals and to devise our teaching methods accordingly.

Secondly, what we have gleaned from our study of the three tutors is that no matter how much writing experience one may have, writing is rarely easy work. Because we keep growing as writers, our tasks can and do become conceptually more complex. And as they become more complex, the greater the imaginative leaps we, as writers, are required to make. In fact, sometimes we can become lost in the rarefied air of the abstractions—as was the case for Joan and her first history paper—and it may take us a while to find our bearings. Even our most proficient writer, Anna, found that heightened knowledge and experience on many frontiers does not make a writing assignment any easier. The more one knows, the more there is to be assimilated and translated into meaning. The end result may be richer and more dynamic, but there is still the enormous and very often time-consuming task of trying to capture, as Browning would say, "the infinite within the finite." We do, it is true, reach certain levels of discursive maturity; but if our writing tasks do become different, or more complex, we are then required to travel in a new direction—to stretch farther and higher. We never really become

"finished writers" per se, but are continually in a state of becoming—moving into and out of more complex stages of development.

The final observation from this study is that as "teachers, as scholars of writing, we need to be writers, personally embodying the knowledge we explicitly claim" (Watson, 1980:24). Active engagement in the writing process itself is perhaps one of the richest sources of information about the writing process we have to tap. Indeed, this is probably why our Writing Tutorial Service is as successful as it is. We have not just teachers teaching writing, but writers teaching writing—a distinction that is becoming, it seems, more and more significant.

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Sentence Combining: Some Questions

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Sentence combining has received a great deal of attention in the field of composition study in the last fifteen to twenty years. Researchers have conducted a series of carefully controlled studies evaluating the impact of sentence combining instruction on students of all levels, from elementary school through to university. Writing teachers have been developing curricula incorporating—and sometimes entirely based on—sentence combining programs. Sentence combining workshops have proliferated, and it is a rare conference on writing that does not include a segment devoted entirely to this pedagogy.

Yet despite this attention by researchers, by theorists, by teachers, there are many unanswered questions about sentence combining instruction. There seems to be strong evidence, for example, that intensive and extensive practice in sentence combining leads students to write pieces that are not only syntactically more mature but, more significantly, holistically superior to those written by students taught by other methods. The unanswered question, however, is why this is so, why sentence combining practice leads to overall superiority in writing.

It was to explore (if not to answer) this and related questions that my colleague, Ian Pringle, and I developed our own research project investigating sentence combining. Given the strength of the evidence and the quality of the research pointing to the conclusion that sentence combining instruction does lead to holistically superior writing, we chose not to replicate such primary research, but rather to perform a secondary analysis of the data collected in one such study. Our aim was to probe and explore these same data from a variety of different perspectives in order to understand why sentence combining achieved such results. To this end, we developed a number of syntactic and rhetorical instruments that

were more highly refined and finely calibrated than those typically used in sentence combining research. In addition, we looked at that cognitive dimension of the writing that can be measured on a level of abstracting scale.

The primary research we chose to re-investigate was the exemplary study of sentence combining at the college level performed by Daiker, Kerek, and Morenberg at the Miami University of Ohio. These researchers very generously and graciously agreed to make available all the essays collected as pre- and post-experimental tests as well as all their own analyses of the data. We were consequently free to conduct our own very different analyses of the same data aimed at uncovering some clues which might suggest possible answers to the question that tantalized us.

The Primary Study

Don Daiker, Andrew Kerek, and Max Morenberg performed their experiment in the fall of 1976 at the Miami University of Ohio. Their goal was to test the hypothesis that sentence combining instruction would produce a statistically significant increase in syntactic maturity, writing effectiveness, and reading comprehension as compared to traditional composition instruction.

The total experimental population consisted of 290 freshmen assigned by computer in an arbitrary fashion to twelve sections of the required freshman English course. Six of these sections made up the experimental group, and six, the control group. The control and experimental groups had the same amount of composition instruction and wrote the same number of compositions, and teachers were matched by experience, effectiveness, and enthusiasm. The control group's composition program was based primarily on analyses of prose models (taken from the *Harbrace Reader*) and discussions of traditional modes of development and rhetorical principles (from McCrimmon's *Writing With a Purpose*).

The experimental group's program was based entirely on sentence combining. The text was Strong's *Sentence Combining* accompanied by the authors' mimeographed materials.

For the pre- and post-tests, students were given two-hour periods to write essays on one of two matched topics. Half of each group was randomly assigned topic A for the pre-test and topic B for the post- test; the other half was assigned the topics in reverse order. (See Appendix A for the topics.)

Syntactic counts (words, clauses, t-units) were performed by trained raters, and the traditional ratios were computed: words per t-unit, clauses per t-unit, words per clause. In addition, the quality of writing was

judged by experienced teachers (two ratings per piece) using holistic, analytic and forced-choice methods. Finally, a reading comprehension test was assigned. The analyses showed statistically significant differences in the experimental group's increase in length of clauses and t-units (the classic syntactic maturity measures) over that of the control group. In addition, the writing of the sentence combining students was judged to be significantly better than that of the control group classes on the holistic, forced-choice, and four of the six analytic factors. On the reading tests, both groups were comparable.

The Secondary Analysis: The Governing Questions

The key questions governing our secondary analysis of the Miami of Ohio data were the following: Why does sentence combining instruction induce higher quality ratings? What else, if anything, do students learn when they learn to combine sentences? As conceived, these two questions were related so that an answer to the second would at least partially answer the first.

As to the first question, although it has not universally been the case (cf. Mellon 1961, Perron 1974, Sullivan 1977, Callaghan 1977, Stewart 1977), many studies have reported that students who have been subjected to sentence combining treatment achieve higher holistic scores as well as higher scores in syntactic maturity (O'Hare 1973, Combs 1975, Pedersen 1977, Schuster 1976, Waterfall 1977, Swan 1977, Daiker, Kerek and Morenberg 1977). Further, in some studies like Pedersen's and Waterfall's, although students showed little or minimal gains in syntactic maturity, they did show improvements in writing quality.

That sentence combining leads to greater syntactic maturity we would expect, but that it should lead to higher overall holistic scores is not so obvious especially since it has been shown that the higher holistic scores cannot be attributed to the higher syntactic maturity scores. Faigley (1979), for example, by using a series of multiple regression tests, showed that three standard measures of syntactic fluency together predicted less than 3% of the holistic rating, and Daiker, Kerek and Morenberg showed that in combination the syntactic factors predicted from between less than 3% to a maximum of about 7½% of the holistic rating variance. (They computed separate scores for pre- and post-tests, experimental and control groups).

The second question is what, if anything, do students learn when they learn sentence combining. Do they develop new or different mental skills or habits? Do they enhance or acquire other cognitive abilities? There has been interesting theorizing about this question. James Kinneavy, for

example, speculates that "it may be that the most important part of the sentence combining lessons was not the sentence combining but the functional teaching of rhetorical principles connected with the sentence exercises" (1979:66). In other words, in the course of these exercises, especially the uncued Strongian types, students are encouraged to think about the purpose of the whole piece of writing and how best to achieve that end given the various syntactic options available. Sentence combining trains them to think and perform rhetorically.

Carl Bereiter (1981) takes a different tack: he argues that sentence combining helps to automate certain syntactic operations. "Facility gained in this way COULD LESSEN THE ATTENTIONAL BURDEN in later use of such devices during the composing process, thus making it more likely that students could simultaneously hold onto content and manipulate syntax." Bereiter's point is that composing is a complex task involving a host of subprocesses. In composing a text, the writer must, at some level, pay attention to his overall meaning, his choice of syntax, his choice of lexicon, the correct spelling of words, the formation of letters, etc. There is clearly a limit to the capacity of one's attention: when one subprocess necessitates a lot of attention, less is left over for the rest. A child who is learning to print can pay little attention to anything else; however, as she becomes proficient in letter formation, much less conscious attention is required for this subprocess and more is available for, say, choice of words.

The value of sentence combining exercises is that they allow students to focus completely on generating and choosing from among syntactic options; such exercises provide the content so that no attention need be paid to meaning, choice of lexicon, etc. Sufficient such practice, argues Bereiter, makes the generation of such options (and perhaps the criteria for choosing among them) more automated. Consequently, when the writer turns to producing her own text, much less conscious attention needs to be focused on such syntactic rhetorical considerations: the generating and selecting is performed automatically.

John Mellon makes a similar, although not an identical point. He argues that sentence combining practice "exercises the student in the manipulation of surface structure operations in ways that facilitate their subsequent use in actual writing" (1979:21). "Behaviors required by sentence combining," he explains later, "can trigger at the appropriate stage the emergence of the skill which permits sentences to be consciously constructed and reconstructed, as it were, in mid-discourse" (65). In other words, Mellon is suggesting that sentence combining practice facilitates a kind of "on the spot"revising that, he argues, occurs (or can occur) during the composing process of decentred writers.

The difference between Bereiter and Mellon is that the former argues that, as a result of sentence combining, the process of syntactic rhetorical generating during composing occurs automatically (below the level of consciousness), while for the latter the same process is fully conscious.

Max Morenberg, in a paper presented at *CCCC*, 1981, extended this argument by suggesting that sentence combining trains students in rewriting in general. What is common to these various discussions of sentence combining is the notion that sentence combining encourages and/or facilitates the choosing among syntactic options for presumably the most effective expression of content.

There are some, however, who make larger claims. For example, Frank O'Hare (1973) speculates that such exercises may be generative at the stage of invention in the way that Christensen claimed his exercises were. "Perhaps the syntactic manipulative skill the students had developed, because it entailed a wider practical set of syntactic alternatives, invited or attracted detail. Perhaps knowing *how* does help to create *what*" (1973:72). Others such as Strong (1979) and Pedersen (1977) seem to go further, at least flirting with the notion that sentence combining develops certain cognitive skills. And surely there is at least a speculative case to be made for this position. If syntax provides categories for expressing one's thinking, widening the range of syntactic structures available may extend one's capacity to express one's thinking. That is to say, the change may be felt not at the level of choosing the best among various options for saying what you want to, but for being able to say it at all. Moreover, if one takes even a modified Whorfian position, widening the range of syntactic structures available may allow one not only to say, but also to think certain things, indeed to see them at all.

Mellon vehemently denies the possibility that sentence combining induces cognitive development. He argues that there are two separate kinds of growth involved in increasing syntactic complexity; one that comes about as a result of normal cognitive development or maturation (which he defines as the enrichment of our conceptual knowledge) and one that comes about as a result of the increased use of surface-structure manipulations (the introduction of non-restrictive clauses, i.e. secondary statements into primary statements). Sentence combining achieves only the latter kind of increase in syntactic complexity, he argues; it implies no cognitive growth.[1]

[1] One could of course question the implication that the introduction of secondary statements into primary ones involves no cognitive development, no increasing sophistication. Hunt (1977) and Loban (1976) show that increased use of such syntactic structures is a concomitant of development, so presumably one could argue the reverse.

What sentence combining does, in other words, has been a matter of some theoretical controversy. There is very little that has been uncovered in the relevant research studies to corroborate or disconfirm any of this speculation. It was then, with a view to searching through the available evidence for more leads, that we decided to perform further analyses of the Daiker, Kerek, and Morenberg data.

The Analyses

In all the sentence combining experiments to date a very limited number of analyses have been performed on the pre- and post-test essays generated by the subjects. Syntactically, words, clauses and T-units have been counted, and the various ratios computed with special emphasis on words per t-unit and clauses per t-unit.

When writing quality has been evaluated, the measure has always been an overall holistic score. Daiker, Kerek and Morenberg went somewhat farther than other such researchers by also performing an analytic rhetorical analysis, according to the following categories: ideas, supporting detail, organization and coherence, voice, sentence structure, and diction/usage.

We chose to develop several different or more precise instruments. First, Ian Pringle developed a very detailed syntactic instrument aimed at determining precisely what syntactic changes took place as a result of sentence combining. The results of those analyses will be reported elsewhere. My own analyses were both rhetorical and cognitive. The rhetorical analytic categories developed by Daiker, Kerek and Morenberg were not suited for answering the questions we had posed for ourselves. Consequently, a different set of rhetorical criteria were developed. The relationship of our instrument to the Daiker, Kerek and Morenberg scale is illustrated in Table 1. Most significantly, their "organization and coherence" category was subdivided into four attempting to get at, first, how well unified the piece was (whether there seemed to be one controlling idea, an underlying sense of purpose); second, how well organized the piece was, how well the individual elements were marshalled to convey that purpose; third, how succinctly and economically the argument was presented; and finally, how cohesive or connected the piece appeared. Cohesiveness was intended in the Halliday and Hasan (1976) sense, that is, the explicit textual indication of connectedness. Our measure, however, was impressionistic and did not involve a count of cohesive ties. It was important to distinguish organization (logical coherence) from cohesiveness (the surface appearance of connectedness), since one might argue that sentence combining exercises simply develop the appearance rather than the fact of logical coherence.

Many of these rhetorical criteria not only characterize the quality of texts, but also imply certain kinds of cognitive processes for their achievement, especially unity and organization. In addition, we used another indicator of the cognitive dimensions of specific texts: this instrument was developed in a previous study (Freedman and Pringle, 1980) and defines the degree to which the writer abstracts from her primary data, whatever the primary data is. The instrument gets at the number of rungs up the ladder of abstracting the writer herself climbs, the degree to which she generalizes about her primary data, and then generalizes about her generalizations, etc.

TABLE 1

ANALYTIC SCALES

Daiker, Kerek and Morenberg	**Freedman and Pringle Rhetorical Criteria**
Ideas	
Supporting details	Development
Organization and coherence	Unity
	Organization
	Cohesiveness
	Economy
Voice	Overall style
	Vividness
Sentence structure	
Diction and usage	Vocabulary range
	Register

For the rhetorical analysis as well as the level of abstracting, each paper was scored by two independent raters. See Table 2 for a summary of inter-rater correlations.

One final note. Not all the papers elicited in the study were used in each kind of analysis. For the rhetorical analysis as well as the level of abstracting, valid comparisons could only be made where there was identity of what is commonly called mode, but what Kinneavy (1976)

defines as aim. Despite the careful specification of the topics assigned in the study, there was some variation in the essays elicited by aim. Consequently, our first step was to categorize all the papers by aim, using Kinneavy's classification; for the rhetorical and cognitive analyses only those papers were included whose aim was to prove a thesis. The number of students was 134 and of essays 268.

TABLE 2

Inter-Rater Reliability
Rhetorical Criteria

UNITY	.845
ORGANIZATION	.8747
DEVELOPMENT	.8054
REGISTER	.7534
STYLE	.8025
VOCABULARY RANGE	.7921
VIVIDNESS	.8063
ECONOMY	.7753
COHERENCE	.8021

N=134 students (268 essays)
P=.000 unless otherwise indicated

Findings and Discussion: Rhetorical Criteria

As indicated in Table 3, there were increases in both the experimental and the control groups between the pre- and post-test essays. These increases could have simply been a reflection of normal maturation or could have come about as a result of direct instruction in composition; failing comparison with a third, non-instructed group, we cannot know. An analysis of co-variance reveals that the increases in the experimental group were significantly higher on the following criteria: unity, organization, development, style, vocabulary range, vividness, economy, and cohesiveness. It was only on the criterion "register" that the control group increased significantly more than the experimental.

While gains in stylistic effectiveness seem more obviously attributable

to increased syntactic fluency, vividness and vocabulary range cannot so easily be explained. The findings that are most suggestive, however, are the relatively greater increases in unity, organization, cohesiveness, and economy.

How do such increases relate to the sentence combining treatment? To understand this, it is necessary to look more closely at precisely what students do when they combine sentences, especially the free Strongian kind of sentence combining that was used in this study. What such exercises force students to do is to look for relationships, to see or discover inter-relationships among separate kernels or propositions such that the various elements can be combined into a single unit with some elements subordinate and others superordinate. Sentence combining then develops at least a propensity for, or perhaps a skill in looking for the underlying principle whereby propositions may be inter-related and then hierarchically organized within one unit—the t-unit.

The following hypothesis consequently suggests itself. Perhaps this ability at the t-unit level is carried over to the larger discourse level. The increased ratings on unity and organization suggest that the students were increasingly able to find principles of interrelationship among their various ideas and that, as within the t-unit, they were able to organize these various elements into larger hierarchic patterns. Further, the scores on economy suggest that the students were increasingly able to discard superfluous material or ideas. Thus, a skill developed at the t-unit level seems to have been carried over to the whole-text level.

What this implies about what has been learned is not clear. Mellon's comments on learning help to formulate the possibilities. He writes: "As ordinarily used by psychologists...'learning' refers to the acquisition of knowledge and skills. Of 'skills' it is important to remember that a skill once acquired is a skill learned, even though, with the passing of time and owing to changes in the parts of the organism upon which the skill operates, the degree or extent of its application may increase" (1979:16). The question is, then, has sentence combining resulted in the acquisition of a new skill or has it involved the extension of a skill already there to a wider range of material.

There is a further possibility, however. In his discussion of the acquisition of knowledge, which is part of learning, Mellon points out that "the learning of overt conceptual knowledge occurs in two forms—we acquire new concepts and the new words necessary to name and talk about them, and we also add to, and establish an increasingly intricate network of interrelationships among the meanings of concepts we already possess."

Perhaps, and of course this is merely a possibility, sentence combining

TABLE 3

Comparison of Performance according to Rhetorical Criteria

	MEANS						ANALYSIS OF COVARIANCE	
	CONTROL			EXPERIMENTAL				
	PRE	POST	MEAN	PRE	POST	MEAN	F-STATISTIC	SIGNIFICANCE
UNITY	4.457	4.886	.429	4.653	5.959	1.306	4.835	.032
ORGANIZATION	4.543	4.914	.371	4.816	6.082	1.266	6.275	.015
DEVELOPMENT	4.257	4.429	.172	4.612	5.612	1.0	6.004	.017
REGISTER	4.429	4.6	.171	5.163	5.265	.102	9.678	.003
STYLE	5.371	5.571	.2	5.551	6.714	1.163	8.769	.004
VOCABULARY RANGE	4.514	4.371	-.143	4.959	5.245	.286	6.361	.014
VIVIDNESS	4.343	4.286	-.057	4.49	5.592	1.102	15.416	.000
ECONOMY	4.8	5.114	.314	4.898	5.898	1.0	9.418	.003
COHERENCE	5.571	6.114	.543	6.02	6.898	.878	4.112	.047

functions so as to develop the network of interrelationships, or at least develops a habit of mind which looks for interrelationships, which consequently extend conceptual knowledge. In other words, sentence combining if not in itself involving cognitive development, may play an intimate role in its development.

It is important to stress that the evidence here is only suggestive—and far from conclusive. The questions raised, however, are researchable, although a very different kind of experimentation will be required from that conventionally used in sentence combining research.

Level of Abstracting

The analysis according to the cognitive scale (the level of abstracting) provided another important finding which bears directly on the preceding discussion. There was no growth on the level of abstracting for the experimental group. See Table 4. Furthermore, there was growth in the level of abstracting in the control group so that an analysis of co-variance reveals that being in the experimental group had a negative impact, it decreased one's chance of rising on the cognitive scale.

At first glance, this evidence seems to run counter to what we have learned from the rhetorical analyses. Level of abstracting also measures the ability to order within hierarchic patterns; the difference is, however, that level of abstracting measures the ability to move to higher, more inclusive superordinate systems, to higher degrees of abstractness, to larger superstructures within which the smaller structures fit. The sentence combining groups did not show any increase in this ability.

Previous research (Freedman and Pringle, 1980) has shown that growth along the level of abstracting scale does correlate with maturation: third year university students were able to abstract to higher levels than fifth year high school students.

One wonders then why there was no growth at all for the experimental group. It would be useful to be able to compare these results with those of a third group of students who had been exposed to no composition instruction—to see what degree of growth could be expected over this period of time in an academic environment. The question which nags is whether the sentence combining simply did not accelerate growth or whether it actually stultified development. It is possible that the exercises themselves, by training students to focus only on the content provided in the text, discourage any attempts to go beyond and outside the ideas presented; perhaps this tendency becomes habitual so that generalizing, interpreting and inferencing are all discouraged. If so, this is a danger that all teachers should be apprised of.

TABLE 4

Comparison of Performance
According to Level of Abstracting and Number of Points

	MEANS						ANALYSIS OF COVARIANCE	
	CONTROL			EXPERIMENTAL				
	PRE	POST	MEAN	PRE	POST	MEAN	F-STATISTIC	SIGNIFICANCE
Level of Abstracting	2.974	3.439	.465	2.716	2.70	-.016	47.934	.000
Number of Points	5.132	5.053	-.079	5.519	4.682	-.837	25.503	.000

(N=114 STUDENTS, 228 ESSAYS)

Note: There is a significant gain on the "level of abstracting" for the CONTROL group (relative to the experimental), and a significant loss in the number of points for the EXPERIMENTAL group (relative to the control).

It is also important to know whether the traditional composition program accelerates growth in abstracting and, if so, how. What we know about these programs is that they focus on analysis of models and discussions of rhetoric. What in this could have encouraged growth? Possibly the texts read themselves. Possibly the free wheeling, speculative discussions that sometimes take place in the context of reading-based composition instruction. The point is that without far more knowledge about exactly what transpires in the control (as well as in the experimental) classrooms we simply do not know.

Conclusion

We have ended with more questions than we began with. However, although we have not answered our original questions, our re-analysis has allowed for some conjectures.

Sentence combining does seem to develop or enhance certain skills, or perhaps just habits of mind, at the t-unit level, which then transfer to the whole discourse level and consequently result in more unified, organized, coherent, and concise pieces of writing. Whether its impact can be categorized as the development of a skill or simply its extension, whether it stimulates real cognitive development or creates a set of useful habits—all this remains to be explored.

Further, what sentence combining does not do, at least in the short run, is develop the ability (or inclination) to ascend to higher levels of abstracting, although other composition programs seem to achieve such an end.

It has become clear as well that, to answer what are certainly very important questions about sentence combining, more and different research must take place. The following avenues suggest themselves.

1. It is important to start conducting observational studies, focusing on exactly what does happen in the writing classrooms, both those that use and those that do not use sentence combining.
2. It is also important to compare the achievements of students whose composition programs involve sentence combining and those in traditional programs with students who are given no direct instruction in writing.
3. To see whether cognitive changes do take place, and to define these changes, the experimental procedures as well as the testing instruments of cognitive psychology should be enlisted. For example, one might use composing aloud as a way of discovering what happens during sentence combining exercises themselves (both structured and unstructured) and as a way of seeing the impact of sentence combining in other kinds of writing.

4. The effects of sentence combining in the writing and thinking of students in their discipline-specific works need to be examined; close observation as well as meticulous analysis are necessary.
5. Longitudinal studies should be undertaken as well, to determine the effects of long-term instruction in sentence combining as well as the effects of sentence combining instruction in the long term. Most sentence combining studies report on instruction that took place over a single term or part of a year. What kinds of results would we see with sentence combining practice undertaken over several years? Secondly, researchers must try to determine the long-term effects: several years after such instruction, what kinds of differences will we see in the syntactic control as well as the rhetorical and cognitive dimensions of the students' writing?

Such research studies are essential—not just to enlarge the knowledge of researchers and theorists, but especially to enhance the understanding of teachers and curriculum planners. As a discipline, we need to understand precisely what sentence combining can and cannot do.

The net result of our analysis, then, was to point to the need, in fact, the urgency, of more sentence combining research. If sentence combining continues to be an attractive pedagogic tool, those committed to its use must be given a clearer sense of its strengths, its limitations, as well as its potential hazards.

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Writing to Discover and Structure Meaning in the World of Business

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A recurrent theme in contemporary research into the composing process is the claim that experienced writers use the heuristic power of this process to discover their meaning. Donald Murray is an articulate spokesman for this view:

> Writing is a significant kind of thinking in which the symbols of language assume a purpose of their own and instruct the writer during the composing process (1982:18).
>
> The writer's meaning rarely arrives by room-service, all neatly laid out on a tray. Meaning is usually discovered and clarified as the writer makes hundreds of small decisions, each one igniting a sequence of consideration and reconsideration (1982:88).

This view, of course, has important implication s for writing pedagogy. And in fact, writing tutors in university settings are successfully teaching student writers how to use the composing process to discover meaning in the factual information of their respective academic disciplines (Freedman, 1982). The question that this article will address is whether writing instructors in a business environment can teach on-the-job writers to use the composing process to discover meaningful patterns in their data and to structure this meaning so as to maximize its effectiveness for the intended reader.

Writing within a business organization, however, has two characteristics that separate it from much academic writing. First, each written communication is directed towards a specific work function. Briefing notes, planning documents, research reports, proposals, feasibility

I would like to thank my colleague Heidi Taylor, who helped me as I prepared this paper by asking the right questions.

studies—all are designed for busy readers who will use the information contained in a text to perform a particular aspect of their work. Second, on-the-job writers frequently operate under the pressure of an immediate deadline, or even under the pressure of multiple deadlines, and so must work quickly to take full advantage of the periods of writing time that their schedules permit.

Given the specific functional focus of texts produced in an organizational setting, and the frequent pressure on employees to compose these texts quickly, it might, at first glance, seem impractical for writing instructors in the business world to accent the potential of the writing process for discovering meaning. One could argue that because of the narrow, pragmatic focus of most on-the-job writing, writers in a business organization really have no need for heuristic composing strategies; and that even if these writers could benefit from such strategies, they simply do not have time for patiently developing their meaning.

This paper will present the opposite view. The author will suggest that, indeed, on-the-job writers in business can benefit from learning to use composing strategies to discover and then structure their meaning. The author will suggest as well that business organizations can also gain in cost-effectiveness from process-based writing training which allows middle managers to send reports produced by their staff on up the hierarchy to executive decision-makers without having to spend a great deal of time rewriting them. The first part of this paper will set the scene for this discussion by describing the *bottom-line* expectations of readers at senior levels at the Bank of Canada and the impact of these expectations on junior economists entering the organization from university. The second part of the paper will describe how an in-house writing workshop helped five such economists learn to use the writing process first to discover the deeper meaning, or *story*, in their financial data, and then to structure this *story* in *bottom-line* form. The final part of the paper will discuss the results of the workshop and suggest implications for unity instruction in a business environment.

The Bottom-Line: The Reader's Need For a Story

In the Bank of Canada, which provides the backdrop for this paper, written reports play a key role in communicating information upwards in the hierarchy from the research and analysis level to more policy-oriented levels. Because the latter group has such a large volume of material to read as background for decision-making, they insist on *bottom-line* writing: these executives want the *story*—a sharply focused, accurate analysis of the economic forces underlying a set of financial data—presented to them clearly and succintly; equally important, they

want reports structured so that a concise overview of this story is given prominence at the beginning of the text.[1]

The assumption implicit in this insistence on a bottom-line structure is that it is more efficient for the busy reader. The reader has the option of stopping after the story overview, if this is all that is needed. On the other hand, if he or she decides to continue on to the supporting detail, the broad conceptual framework provided by the story overview can be used to assimilate this detail more quickly.

Junior economists entering the Bank from university must learn to refine their writing skills to accommodate the bottom-line expectations of their new readers. These economists must make the transition from an academic setting, where they were accustomed to reporting extensively on their research to an audience who was expected to read everything that they wrote, to a business environment where readers will only read reports designed to present a relevant story, a highly focused analysis of financial data, in an immediately accessible form.

To help employees make this transition, the institution provides limited in-house writing training for those who need it. In this training, employees bring on-the-job writing tasks to the instructor, who guides writers through the recursive cycles (planning, drafting, revising) of the composing process.

As an illustration of an approach to writing instruction which brings together a *process* pedagogy and a bottom-line philosophy, the next part of the paper will describe a writing workshop in which five junior economists learned to use the heuristic power of the composing process to discover their meaning. More specifically, the author will describe how these economists learned to use writing strategies, first, to identify the story contained in a set of financial data, and then, to structure this story in a way that is immediately accessible to their audience.

The Briefing Notes Workshop: Providing the Reader With a Story

The writing situation

Each of the five junior economists who participated in the workshop is a specialist in one particular area of financial activity: banks, non-bank financial institutions, the business credit market, the mortgage market, or financing in foreign currencies. Each specialist is responsible for monitor-

[1] In a survey of Senior Officers in this organization there was a consensus on their need for bottom-line reports with an overview of the story presented near the beginning of the text. While these officers used a variety of terms such as 'message' and 'headline' to refer to story and story overview, it was clear that the same concept was being advocated.

ing statistical data in his or her area, analysing the data, and then reporting on this analysis to more senior personnel. At the time of the workshop each of the five participants had been with the institution for approximately three years; none of the five, however, had fully developed the analytic skill required to discover the essential underlying story in his or her data.

The context for the workshop was a writing activity known as the *briefing notes write-up*, during which each specialist analyses the financial data in his or her area and then, guided by a more senior economist at the middle management level acting as Coordinator, summarizes the significant developments in a text of approximately two pages. This activity occurs every six weeks, on average, and takes three days.

The immediate reader of these briefing notes is the Coordinator, who consults with the specialists during the write-up, providing feedback on successive drafts. When he is satisfied with the texts, he forwards them to the primary reader.[2]

The primary reader is a Senior Officer of the institution who uses the briefing notes as background in preparing for the task of delivering an oral presentation to the Board of Directors, who meet every six weeks to be briefed on financial developments.

Limitations and Goals

The Coordinator of the briefing notes write-up was the catalyst for the workshop. Given the staff resources involved in the write-ups, he wanted them to be as effective as possible. And not satisfied that the preparation of the briefing notes was being carried out as efficiently as it might be, the Coordinator looked to writing training to enhance the specialists' contribution.

In the Coordinator's view the specialists, instead of consistently identifying and presenting a story that would explain trends, or "significant movements" in their financial data, often tended to become distracted by "extraneous surface detail." And having observed them during a number of write-ups as they produced their briefing notes, the Coordinator attributed this lack of focus to a limitation in the writers' composing process.

When the instructor spoke with the specialists prior to the workshop, the nature of this limitation became apparent: they had not learned to draw on the potential of the writing process itself for discovering and structuring meaning. As writers, their repertories did not include strate-

[2] Here the author is using the categories of immediate, primary and secondary reader suggested by Mathes and Stevenson (1976).

gies for first exploring their statistical data, and then identifying and effectively presenting the story underlying "significant movements," or trends, in it.

In general, the instructor found that the specialists, when preparing their briefing notes, tended to follow a rather restrictive sequence of procedures. After an initial hard look at their statistics, and before starting any actual writing, they would typically try to develop ideas in their minds about the data. Then they would attempt to get these ideas down on paper in as organized and polished a form as possible in a first and final draft.

As a result, the specialists, as described by the Coordinator, "tended to miss the forest for the trees," so that the written product he received from them often consisted of an unconnected series of relatively superficial observations about their data, rather than the deeper story that he wanted. This meant that the Coordinator, in order to give the primary reader the type of information that he needed to prepare his delivery to the Board of Directors, was himself frequently left with the task of taking the specialists' texts and, as he put it, "pulling the story out of the fragments."

Specifically, then, the Coordinator had three goals for the workshop. First, he thought that it would provide a good opportunity to connect the writers with their audience, and so would encourage both the immediate reader, himself, and the primary reader, the Senior Officer, to be explicit about what type of story they needed. (The Coordinator was quite aware that this would force them both to do some careful thinking about just what it was they wanted from the specialists.) Second, as an experienced writer with a good understanding of the composing process, the Coordinator hoped that the workshop would develop the specialists' ability to use writing strategies to discover and present the deeper story in their data. Third, he hoped that the writing training, through this intervention in the specialists' composing process, would enable them, in future write-ups, to provide him with sharply focused and effectively structured texts representing their best judgment, as technical experts, about the essential story contained in their data. While the Coordinator knew that he might not always completely agree with the conclusions reached by the specialists, the groundwork would be done: he would have an analysis to react to, and his interaction with the specialists could then begin at a higher conceptual level.

Discovering and Structuring the Story in Financial Data

The three-day workshop included a number of stages. As usual during a briefing notes write-up, the specialists had both time to work alone and

the chance to confer individually with the Coordinator. In addition, and this was an innovation introduced to the write-up by the instructor, the specialists came together at regular intervals to talk with one another about how the preparation of their texts was going. In another departure from the normal course of events in a briefing notes write-up, the specialists had the opportunity to meet with the Senior Officer to talk about what he needed from them in order to do his job.

Our discussion in this paper of what happened in the workshop will focus on one particular theme—how the specialists learned to use the composing process first to discover the *story* inherent in their financial data, and then to structure this story in a *bottom-line* form. The diagram below provides an overview of the different stages in the workshop as viewed from this perspective.

Discussing the Writing Process

Prior to the workshop each specialist had been asked to respond to a "Writing Process Profile," a series of questions inspired by Linda Flower (1981). Discussion of this "Profile," to lead off the workshop, was important in several ways. Establishing the concept of writing as a process, it encouraged each of the specialists to stand back and look at his or her own writing practice, and to recognize areas where new strategies could be helpful.

As well as helping the specialists to begin developing a perspective on their own writing practice, the discussion served to introduce the concept that writing is a process that a writer can use to discover meaning. For these writers, this meant seeing the potential of the composing process for recognizing the essential story in their financial data.[3]

Connecting With the Audience

Using the approach to audience suggested by Mathes and Stevenson (1976), the specialists were able to characterise their immediate reader,

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[3] While the questions posed in the 'Profile' are meant to encourage writers to stand back and think about their writing process as a whole, a number of the questions relate specifically to the concept of using composing strategies to discover meaning.
Three such questions follow:

a) Do you try to conceptualize the whole briefing note at the beginning after first looking at your data, or does this come gradually as you write?

b) Do you ever talk over your ideas with a colleague before starting to plan your briefing notes or from time to time as you proceed? Does feedback from colleagues ever help you see new relationships in your data?

c) Do you usually revise the context of your briefing note? If so, when and how? What factors do you think about as you revise? When revising, does it ever happen that you change your original focus for your briefing note?

DISCUSS WRITING PROCESS	Consider concept of using writing process to identify 'story' in set of financial data.
CONNECT WITH AUDIENCE	Hear primary reader explain need for 'story'.
DEVELOP PRELIMINARY PLAN	Use heuristic strategies to identify trends in financial data; construct visual schema to link trends into rough outline of 'story'. Discuss schema with other specialists.
DRAFT	Begin to develop 'story' in first draft.
REVISE	Discuss first draft with other specialists. Refine 'story' and supporting detail in second draft, and discuss with Coordinator.
REVISE	Use feedback from Coordinator to restructure text into bottom-line form in final draft.

the Coordinator of the briefing notes write-up, who would approve the texts and then send them upwards in the hierarchy; their primary reader, the Senior Officer, who would be using these texts to perform a specific function; and their secondary readers, other economists in the organization, who would use the briefing notes as a reference.

This audience analysis set the stage for a visit from the primary reader, the Senior Officer who uses the briefing notes in preparing himself to address the Board of Directors. The Senior Officer began by explaining that his function is to give the Directors a broad overview of financial developments that have occurred since the last Board meeting. This function determines what he needs from the specialists: "What I look for is the specialists' assessment of their area. How do they *explain* what's going on? ...The crucial thing is to have a coherent story, coherent and correct.... It's not 'elevator economics': this went up and that went down."

The Senior Officer went on to define his terms. The story should "describe the underlying economic forces" inherent in the statistical data: it should focus on important financial developments, offering an explana-

tion of why key events occurred and suggesting "causal linkages" between these events.

He said that only detail supporting the story should be included in a briefing note. "If it's part of a story—if it feeds into something, that's fine. But don't throw in detail that isn't part of the story. An unrelated detail isn't going to stick in anyone's mind anyway."

The Senior Officer acknowledged the relative difficulty of the analysis involved in identifying the underlying story in a body of financial data. He mentioned that in his own work he often uses the writing process itself to clarify his analysis of financial events, starting with a "general sense of direction" and then gradually discovering his meaning as he writes. "Where you start out is not necessarily where you end up." He concluded by adding that this process of discovering one's meaning through writing means, of course, throwing away a lot of material. "It's painful but you have to do it."

Developing a Preliminary Plan

To help them explore significant trends in their financial data—the first step in developing their stories—the specialists experimented with three heuristics often used in creative and academic writing but not normally associated with writing in a business context: freewriting (Elbow, 1973), clustering (Ricco, 1983) and tree diagraming (Flower: "issue tree," 1981). While each person quickly developed a preference for one or two of these new strategies, all five writers found the heuristics useful in exploring their data for trends.

Next, and again this was a new procedure for the specialists, each writer constructed a visual schema, of his or her own design, to connect the trends identified in the data into a meaningful pattern. In this effort to trace the rough outline of their stories, three of the writers decided to use a cluster as their schema, while the other two used a tree diagram. For each writer the schema would eventually serve as a preliminary plan from which to start drafting.

Whatever the individual preference for heuristics and visual schema, each of the five specialists succeeded in discovering a pattern of the "underlying economic forces" inherent in the data. Then, guided by give-and-take discussion of his or her schema with the other four specialists, each writer was able to refine this story outline to the point where he or she felt ready to draft.[4]

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[4] During the writing workshop, talking became a powerful heuristic. Discussion with the Senior Officer, with the Coordinator and especially with one another, helped the specialists to develop their stories.

Drafting/Revising

In translating visual schema into prose draft, each writer began the process of developing the "coherent story" requested by the Senior Officer from the pattern discovered in the data. In each case, however, as the specialists talked about one another's first drafts, it became clear to the writer that his or her analysis was incomplete. Through their talk, the specialists were able to go beyond identifying important trends to recognizing deeper underlying relationships in their data.

Using this feedback from one another, the specialists then revised their texts.[5] During this process of revision, the writers developed their stories further, generating explanations for important financial trends and tracing the "causal linkages" between these trends.

When the Coordinator looked at the revised drafts, he felt that each text included the required elements: the analysis was complete, the story visible and coherent—the story contained in the data had been discovered. At this point, however, he asked the writers to restructure their texts into bottom-line form: he wanted the essential elements in each story brought together into an overview, or "umbrella statement" as he called it. This story overview would come at the beginning of each specialist's text and would be followed by the supporting detail, with each significant trend described in a separate paragraph.

The Coordinator reasoned that this bottom-line structure would be helpful to the Senior Officer in his preparation for addressing the Board of Directors: it would give him the option, at a single sitting, of reading only the story overviews, if what he wanted was a broad sweep of financial developments in the specialists' respective areas. On the other hand, if he wanted to look at the diverse trends within a particular area, the story overview would provide a context, allowing him to read through this detail more efficiently. As well, on another level, the Coordinator thought that the specialists themselves would gain from the discipline of composing the overviews. He felt that this process would further refine their ability to analyse a set of financial data for the story contained in it.

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[5] The specialists were guided in their reactions to one another's texts by questions suggested by the instructor (adapted from Elbow: 1981). Among these questions were the following:

a) What thoughts go through your mind as you read the draft?

b) Are there any 'roadblocks' to your understanding?

c) Are you left with a clear sense of the story?

d) Do all the details serve to support the story?

e) Is there the right proportion of generalization to specific detail?

f) From what you know of the primary reader, does the draft address this person's need for information?

Results and Implications

The results of the briefing notes workshop, according to both the Coordinator and the Senior Officer, have been positive: since the workshop, the specialists have been able to produce texts that provide a more meaningful analysis of the story underlying financial data, an improvement in product that reflects changes in the writers' composing process. These results have important implications for writing instruction in a business environment.

The Coordinator has expressed his satisfaction with the improvement in the specialists' written product. Several months and two briefing notes write-ups after the workshop, he feels that he now receives much better texts from the five writers than he did before. Each specialist now comes to him part way through the write-up with a story representing a carefully considered judgment of the meaningful patterns in his or her data. And because the specialists are more advanced in their thinking about the financial developments reflected in this data, the Coordinator's individual discussions with them can now begin at a more sophisticated level of analysis than was the case before the writing workshop; consequently, a higher quality text can be produced within the limited time period of the write-up.

The Senior Officer has also indicated that he is pleased with the results of the writing training. Some time after the workshop, having just used the specialists' most recent briefing notes to prepare his delivery to the Board of Directors, he said that it was obvious that the writers had worked hard to develop their stories. He said that he had found this focused analysis very helpful, and was particularly pleased that in their texts the writers had limited background detail to "facts that buttressed the story." He had also noticed an absence of unnecessary overlap from one text to the other, and assumed that this was a result of increased collaboration among the specialists during the write-up.

The Coordinator's and the Senior Officer's agreement that the specialists now create a better written product on a sustained basis points to a permanent change in the writers' composing process. And indeed, when the instructor interviewed them three months after the workshop, the specialists concurred. Whereas before the writing training they had lacked composing strategies for discovering and structuring the meaning inherent in their data, they now use freewriting, clustering, tree diagramming, and talking with one another and (whenever possible) with their readers as heuristics to help generate, discriminate among, and organize ideas. The specialists' overall approach to the preparation of the briefing notes has also changed. Before, when composing their texts, the writers had generally followed a set, linear sequence of steps in which

they would first, look at their financial statistics; next, try to develop ideas in their minds about this data; and then, finally, attempt to put these ideas down on paper in final-draft form. Now, in contrast, they are able to use repeated cycles of planning, drafting and revising to trace, develop and structure the underlying story.

The comments of one of the specialists reflect the reaction of the group as a whole—he described the briefing notes workshop as a "breakthrough." Before the training he would typically "try to get [his] ideas straight before starting to write." Then once he did start drafting, he would labour over his prose "polishing as [he] went along—this was very tedious and would block out any new ideas." Since the workshop he feels much more comfortable as a writer, composing more quickly and with greater confidence. With a fuller repertoire of strategies for generating and developing ideas (freewriting, clustering, talking with his peers and with his readers), and with a "better organizing procedure for keeping [his] thinking systematic (tree diagramming)," he is better able to "see what's happening in the data, and to refine [his] story and develop a structure"—as he plans, produces rough drafts and revises.

The results of the briefing notes workshop have a number of implications for writing instruction in a business environment. On one level, there are implications relating to the composing process of individual writers, while on another level, there are implications for cost-effectiveness within an organization.

The results of the workshop clearly demonstrate that on-the-job writers in business, even when producing texts with a specific functional focus under the pressure of deadlines, benefit from heuristic composing strategies. They can learn to use strategies such as freewriting, clustering and tree diagramming within the recursive cycles of the composing process to enhance analytical thinking. These strategies can serve to help business writers discover and structure in bottom-line form the deeper meaning, or story, contained in their data—or put another way, to see beyond the statistical "trees" to the conceptual "forest." The workshop results also demonstrate the power of talk as a heuristic. The opportunity given the writers to connect with their immediate and primary readers proved to be extremely important. By providing a clear understanding of exactly what type of information their readers needed in order to do their jobs, this interaction acted as a catalyst for the writers in generating ideas about their data, and gave them a definite focus for developing their stories. As well, talking with one another at regular intervals during the preparation of their texts was very important to the writers in helping them to refine these stories.

On another level, that of cost-effectiveness, the results of the workshop

indicate that process-based writing instruction has definite value for a business organization. An organization benefits when heuristic writing activity allows collaboration between a middle manager and his or her employees to begin on a higher conceptual level. There is also a clear advantage in cost-effectiveness when managers can send texts written by their staff on up the hierarchy without having to spend a great deal of time rewriting them. In the business world where in-house writing instruction faces its own bottom line—that of visibly contributing to increased productivity—this is the ultimate consideration.

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Linguistics and High Technology

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What is "High Technology"?

The phrase is used everywhere to wave a hand vaguely in the general direction of Kanata, Silicon Valley or those even more mysterious places where they manipulate genes....

There is also the image of an activity whose products are going to rob us of jobs, soak us with radiation, turn us into video game junkies, and/or breed various kinds of biological monsters.

In short, Hitech is the new name for everything we do not understand about the applications of the more recent scientific developments. There are two main areas of activity hidden behind the catch-phrase.

The first one is the domain of computers and communications. The tremendous changes which have happened there in the past fifteen years are a direct spin-off from the space program in the U.S.A. On the one hand, spacecraft required light, compact and very robust control and communication systems. The money and manpower available made possible the start of the "chip" industry, which has now acquired many other markets (once the products were there, it was easy to see how to use them in novel ways) and is self-sustaining. On the other, communication satellites have made practical many types of operations on information which were previously too expensive or too cumbersome.

For the public at large, the central element of all these activities is not so much the array of technical developments which has made all this possible, but the intrusive presence in everyday life of objects whose nature is not *material*, but *informational*. The concept of information as a legitimate mode of being was introduced only in the forties, and already it forces itself on an unprepared general public!

There is nothing new, of course, in what information machines do. We have been doing it for ages, with other means. What is new is the rate at which we can do it, which forces our attention, by inducing a massive

shift in the social and economic parameters of our activities. Consider the analogy of the steam engine. For millenia before, people had been spinning and weaving: nothing new at that level. But if a steam engine can run a whole textile mill, we have to start thinking differently about textile production, use and management. We must also start thinking consciously about energy management in the production of goods, in transportation, home and office practices, etc. We all know that for a long time we have not done so, because the attention of the public was focused on the visible objects of the industrial revolution rather than on its ecological aspects.

Similarly, while chips and comsats are impressive and glamorous, the real mastery of the new technology is to be found in a widespread understanding of its systematic implications. This requires that the public at large learn to think consciously in terms of information objects, their properties and their ecology. We shall examine below what Linguistics can contribute in this matter.

However, we must first look at the other main area of high technology: biological engineering. In many respects, bio-engineering is now at the same stage that computers and other information machines were in the fifties. Then, computers were very expensive, hand-made (or nearly so), cumbersome, and generally on the fringe of things. They were featured in comic movies as the source or focus of various catastrophies, where their high priests and attendants were ridiculed. We have a similar attitude now towards bio-engineering labs, except that, in keeping with the spirit of the times, we have turned from comedy to horror stories. Sooner or later, some economic incentive is going to boost bio-engineering work to the same level as *informatique*—in fact, it is already happening. It would be nice if we were not caught short again in our degree of understanding.

The objects that bio-engineering deals with are of a different nature again. Specifically, even as information objects consist of patterns of organisation of matter and energy, those "new" objects consist of patterns of organisation of information. No term has yet been consecrated to designate such objects, and I have proposed the word *sense*, for various reasons, at least one of which should become clear somewhere in this paper.

Sense objects too have their own specific properties and their special ecology. Somehow we must become familiar with them, in a conscious way, before we are overwhelmed and bewildered again. Linguistics can help here too.

1. Some properties of Language

It is trivial to tell a linguist that language is complex, less so to try to see into the nature of its complexity. I believe that it is precisely such an insight that makes linguists useful to the task of giving people mastery over the implications of High Technology.

I see the main sources of complexity in language to be the following:

— Language is self-referring; while this property is not immediately relevant to our present "Hitech", the time will come when it will be, inasmuch as the properties which make self-reference possible are even now being developed for information machines.

— Language involves information systems *and* sense systems, as well as "interfaces" between these and systems of a different nature, energy and matter on the one hand, and on the other the vast uncharted domain vaguely called *meaning*.

The next two sections give a brief sketch of the aspects of the linguist's experience which are directly relevant to an understanding of the issues of High Technology.

2. Linguistics and information

The main concept in information systems is *distinctiveness*, with the attendant notion of a *code*. A code is essentially a collection of distinct objects, with rules for combining them and conventions as to which combinations shall be considered equivalent. The main activity in information technology is the designing, implementing and checking of devices (material, *hardware*, or informational, *software*) capable of effecting specified operations on codes while preserving certain types of distinctiveness.

All this area of thinking ought to be well known to linguists, since the "discovery" of the phoneme. The object of phonology, increasingly well understood, is to study the special codes called *phonological systems*, which serve the purpose of representing in a stable and distinct way the entities of interest in a human language. The principles of phonology are of course independent of the particular implementation of the code, although most of the attention has been given to the "natural" implementation by means of vocal sounds. Over the years, many people have tried to apply information theory to phonology, but most of the results have been trivial or disappointing. The main reason for this is that the kind of systems that information theorists deal with, like most mathematical systems, are extremely regular, and unencumbered with such considerations as the wide variability of the apparatus which is to implement the code in "real life". More recently, the multiplication of uses of computing

machines in widely different environments has made such considerations very important. The linguist has a wealth of experience, however informal, with the way in which the evolution of the human species has coped with the problem of implementing regular codes in *very* irregular environments. Starting with Martinet's *Economie des changements phonétiques*, linguists have devised models of the interaction of the requirements of codes and their ecological context; there is some understanding of the conditions of stability for a code, of the dynamics of its evolution, etc. In this way, historical linguistics and linguistic typology are directly relevant to software and hardware design—if only the specialists involved were to know of each other's concerns.

Similarly, the design of error-resistant codes could benefit greatly from what sociolinguists know of language communication across social and dialectal clines. It goes without saying that benefits would flow both ways: communication engineers have done a lot of work on performance degradation of communication systems in adverse conditions, and the concept e.g., of "graceful degradation of performance" would be very useful to teachers of second languages, to evaluate the teaching of sound systems.

Another area where the linguist's experience is relevant is that of abstract syntax. Characteristically, the syntax of computer languages has so far been simplistic. There was no particular reason to make it more elaborate as long as the only users were specialists who could invest the effort necessary to "think like a computer." Now, on the other hand, "user-friendliness" is *de rigueur*, and that means that our machines must take our preferences into consideration, both for input/output (the "human language interface") and for the structure of the tasks we want to give them (more on this under 3.).

The work of Chomsky has made the technical half of the world aware of linguistic syntax, to the extent that this domain is where interaction between linguistics and technology is the most extensive and the most fruitful. Bypassing the problem of speech recognition, many have developed systems which can interact with the user in a decently flexible form of written English (and other languages too). Now is the time for linguists to jump in, inform themselves and contribute to the refinement of these still-crude systems. There are, of course, many benefits to be gained for linguistics in such an interaction, if only by finding out how and why such systems work so well—or so poorly. Researchers like Z.S. Harris, M. Gross, T. Winograd have already voiced and/or published many interesting and seminal ideas on this subject.

Another form of research which should be of interest to linguists is the attempt at *designing* a human language for specific purposes. For

instance, the LOGLAN Institute, expanding on the work of its founder, J. Cooke Brown, is developing Loglan into a full-fledged language. What distinguishes this attempt from previous designs is that the authors are conscious of semantic and cultural implications (more on this under 3.), and that they are seeking a delicate balance between the objective of total unambiguity at the purely formal level (Loglan grammar can be automatically compiled using the yacc compiler compiler on Unix) and human constraints on syntax.

The seemingly chaotic nature of human syntax is rooted in the same constraints as that of human phonology. In the case of phonology the "boundary conditions" imposed by the anatomy and physiology of the vocal tract and breathing apparatus of humans are obvious. In the case of syntax, one might think that such constraints are irrelevant. But an increasing number of studies show that there are iconic connections between syntactic patterns and patterns of human cognition. A fairly clear, although by no means simple, case is that of the subject/agent/topic complex. In most, if not all languages, one noun group (or whatever entity plays such a role in the language) receives a privileged syntactic treatment. The interpretation of this observation is now occupying many linguists the world over, with considerations such as new and old information, the requirements of human syntactic processors, the universality of the semantics of agentivity, and whatnot. Other linguists (and the same ones too) consider matters such as natural person hierarchies, and their implications as to the morphology and syntax of verbs. At the present time, computers can routinely decode such sentences as *The technician burned the circuit* and *The circuit was burned by the technician*, and correctly extract from both the same knowledge about the state of the circuit and the world at large. On the other hand, they cannot tell why one would use one sentence rather than the other, nor correctly select one in appropriate circumstances. Nor can they decide whether to mark a question by preposing the tense or by appending *eh?*. It is up to linguists to study the boundary conditions on syntax and to tell the computers, which on the whole are ready to comply. And this brings us to sense, etc.

3. Linguistics and sense

The main concept in sense systems has not been given a name. I propose to call it *semiosis*, and hope to justify it, albeit sketchily, together with the use of the word "sense."

The customary use of the word "sense," as in "the five senses" is intimately connected with unconscious, one is tempted to say "instinctive," pattern recognition in the biologically established modes. This can

be extended, and has been, to other modes, as in "infrared sensor, remote sensing, pressure-sensitive switch." The point of pattern recognition is to assign the raw input signal—an information object—to preestablished or dynamically adaptive categories of stimuli. What constitutes such categories is that they are differentially correlated with objects of another class, in some way or other.

For instance, Gestalt psychologists have thrown light on the phenomenon of *closure*, in which a portion of a configuration of (e.g., visual) information is *recognized* as the whole configuration. One can at present but speculate on the foundation for the establishment of perceptual categories; however, much work in psychotherapy suggests that survival requirements must have a strong influence. In other words, in this model, the operation of perception consists in assembling information objects into patterns which are *correlated with something else*, for instance biological imperatives.

Linguists are familiar with such structures; for instance, morphemes are understood to be the correlation of certain kinds of configurations of phonemes with something else, which distributionalists, with virtuous rigour, refused to call meaning. And indeed language does not carry or create meaning, human (and possibly other) beings do. What language does is offer a bunch of ready made, though evolving, correlations between information patterns and whatever the users want to make of them. These correlations have been called *signs*, and linguists (ethnologists also, and more recently semioticians) have bravely muddled their way through them, trying to understand their properties, interactions, conditions of existence and stability, in other words their ecology.

The most insightful definition of a sign I know is that of C.S. Pierce; though obscure at first glance, it pins down the essential dynamics of the process whereby a sign (or, as I like to say, a sense object) arises. This process, which, borrowing an articulate Greek structure, he calls *semiosis*—i.e., *semeion*, 'sign' + *-sis*, 'the process of'—involves a form of interaction between two objects which generates a similar relation between one of them and a third. In other words, if some configuration correlates sucessfully with something else, this very correlation tends to give rise to others like it: in language, such events are called *effets de sens*, derived meanings, connotations, and the like.

Pierce's definition is purely phenomenological; there is a lot of research and *reflective inquiry* to be done in order to work out the details of such processes, and surely linguists have some headstart.

Pierce's definition also entails a recursive character for semiosis, and ultimately the possibility of self-reference. This was exploited by Godel in the proof of his famous theorem, and is slowly finding its way into

computer systems, bootstrapping them from the status of information machines to that of sense machines. This is the area of Artificial Intelligence (AI), which, not surprisingly in the context of this discussion, has as its subdomains Pattern recognition (i.e., the reproducing of human sensory functions), Language processing (self-explanatory), Problem-solving (i.e., seeking acceptable or feasible transformations of sense patterns into a form matching a stated goal, starting from a description of a given situation). Following the lead of Japan, many countries are committing resources to the development of this field, in an effort which has been compared to the Moon program of the sixties. It would seem desirable to make as much use as possible of the experience of linguists, psychologists and ethnologists in such an endeavour, in order to avoid reinventing cognitive wheels.

Biologists and bio-engineers, from the start, have to deal with sense entities. When the nature of the genetic code was revealed to the world, many speculated on the similarity, or lack of it, between the genetic code and language. They sensed (pun intentional) that the way language uses sounds could tell us something about the way in which the cellular machinery uses sequences of certain special chemical radicals.

Generally speaking, chemical species are intriguing to linguists. Some use chemical metaphors, the most common revolving around the notion of valence and bonding. Not much has come out of these speculations, however, because we have not focused much on the underlying dynamics of the perceived similarities.

As biologists progressively worked out the details of how the genetic code is expressed in the systems of the cell, we have begun to see how the notion of sense can link linguistic research and biology. In this case, the connection is more at the fundamental level than in technology. In cellular systems, we can directly observe the properties of sense objects. Messenger RNA works very much like a recoder, transforming the information while preserving specific features of distinctiveness. Ribosomes are like morphemes, recognizing specific sequences of codons at one end, while matching specific aminoacids at the other: molecular signs! A fascinating question, of interest to linguists and biologists alike, is whether the correlations between codons and aminoacids are arbitrary. It is not clear even how to ask this question in a precisely answerable way, but there it is in biology, after a long history in linguistics: φυσει or θεσει ? i.e., by evolving or by positing? It should not be difficult to see that a serious answer to this question is crucial to our handling of biological engineering....

Another property of cellular systems, which may throw light on the previous question, is that biological molecules are often self-assembling.

On selectional criteria alone, this makes sense (it does, doesn't it?); but how wonderfully lucky that it is possible at all! (On the other hand, if it were not, we would not be here to speculate on it). Do sense systems in language show the same property? This has been suggested several times (e.g. Hockett's notion of *deep structure*, in which the senses of morphemes contract relations which are not otherwise signaled in the overt structure) and is the very basis of R. Schank's approach to language understanding.

As a final example of the investigation of sense systems, we note that cellular systems exhibit a form of self-reference, embodied—literally—in the immune system. This organisation is engaged in the production both of signatures identifying the organism—ultimately the genome out of which the organism arose—and of sensors to distinguish between legitimate components of the system and aliens. In a similar way languages have evolved special sense units to police the language itself. Very little systematic work has been done, however, on the ecology of these elements (e.g. Hockett's, again, considerations on editing, or Harris's metalinguistic operators).

4. In sum

It is characteristic of the beginning of a change, as we noted earlier, that people notice small, isolated aspects without necessarily perceiving the major trend. I have tried to take the emphasis of these comments away from the immediate aspects of technology, towards an understanding of their longer-term significance. The trend I see is that, having acquired a remarkable mastery over matter and energy systems (we are still struggling to acquire the corresponding wisdom), we are now turning to other kinds of systems, those of information and sense. The task at hand is to understand their dynamics, in order to make the right kinds of decisions both at the level of practical implementation and, more importantly, at the level of social and ethical concerns. A feature of these new systems which distinguishes them from previous kinds of objects of technology is that they increasingly resemble mental objects, the study of which has heretofore been the province of "social scientists" and human ists. The nature of the new technology is best summarized in the area of AI mentioned above. And within AI, the subdomain of Language processing gathers all the significant elements found in the other subdomains. It may be that solutions can be found separately to each individual practical problem of AI, or any other area of High Technology. If so, we would still find ourselves in a state of general disorientation. The type of awareness linguists have developed about language, or ethnologists about other sense systems, is needed to bring technologists a wider, contextual

perspective on what they are trying to do. This is central to the work at hand, since, to borrow a phrase from Bateson, the objects we want to operate on are increasingly "creatures of context."

Beyond the technology of information and sense, we can predict in the distance a technology of increasingly mental objects. D. Hofstadter's columns in *Scientific American* contain many speculations on this topic, from the nature of musical creativity to the ecology of ideas. In the latter case, elementary ideas, or *memes*, are viewed in analogy with viruses, which can invade a population of organisms, in this case the minds of a human group, and use their internal machinery to reproduce and propagate. This may lead to a technology of propaganda, of course, but also to mental prophylaxis...But nil novi. Science fiction writers have long ago broached this topic. One may only hope that by then semioticians will have developed a sound basis of understanding to guide the practical efforts of the device makers.

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Second Language Student Placement through Self-Assessment

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Although self-assessment has been used for a long time now in areas as diversified as psychology, sociology, business, etc., it has not yet really found its way into the fields of second language teaching and testing. The technique seems simple enough to the casual observer but even though a few articles have been written on the subject during the last ten years, many questions remain. The obvious one concerns the ability of the students to evaluate with a reliable degree of precision their own level of performance on a given task. But even when this has been answered satisfactorily, doubt still persists as to the applicability of self-assessment to classroom situations (as opposed to research lab conditions) and to the use that can really be made of the results such a technique could yield. In this paper we would like to address these questions by first touching briefly on the principles underlying self-assessment and then describing a three-part, four-year research project that has led to its use as the sole means for second language student placement in the various English and French courses at the Centre For Second Language Learning of the University of Ottawa.

The Concept of Self-Assessment

It has become somewhat trite to state that evaluation is an integral part of the learning process and that it should reflect closely not only the objectives of a given program but also the approach being used to teach it. There seems, however, to be quite a gap between words and deeds if one looks, for instance, at the types of evaluation that are being used in the so-called communicative approach where discrete point and multiple choice items are still the rule, not the exception. The recent shift in emphasis from teacher-centered towards student-centered pedagogy has

brought about questions as to the evaluation processes that would be best suited for this relatively new approach. It is obvious that in a student-centered setting the student becomes responsible for many of the decisions concerning what and how he wants to learn. The teaching/learning of languages for specific purposes, the use of a functional approach, and even more that of a communicative approach require that the student be a part of the complete learning cycle. It is unacceptable that his role be restricted to that of a learner of content chosen by others for him through techniques imposed by others upon him and for purposes established by others for him. But, as Fellenz (1976) points out: "Self-directed learners are not produced simply by telling adult students that they are to be responsible for their own learning...." They need help in reaching a stage where they will be sufficiently autonomous to proceed on their own. At the same time, this new found autonomy carries with it the responsibility of making the decisions as to when sufficient learning has occurred, given the initial (or revised) objectives. In other words, the students have to be able to assess their own progress.

The ability to evaluate one's own performance is of paramount importance in life since it is the only way one has of finding out how to adjust to the environment, to make proper decisions and choices, etc. But while this capacity may be socially acquired during the growing up and maturing process, thus making a person more or less able to cope with real life situations, it does not necessarily follow that self-assessment know-how is directly transferred from social life to classroom learning situations. On the other hand, it seems obvious that some form of self-assessment is occurring when a student coming to the end of a language course says things like: "I think I understand the newscasts better" or "I don't have so many problems with prepositions anymore." The question thus becomes whether such judgments have some foundations in reality or are mere unsubstantiated feelings.

There are two important aspects to consider when asking questions of that nature about self-assessment. First, when an adult student puts himself in a learning situation he knows why he is doing it and he has a good idea of where he wants to go, of what he is expecting from the course. It is quite possible that his expectations and his needs will not coincide, that they will have to be revised during the course but it is most important that the opportunity to evaluate his situation vis-à-vis his objectives exists.

The other point is that before being a learner of a second language, the adult already knows a language and he therefore knows in a more or less explicit way how and why he uses his own language. This is why it is important that the learner be the one to evaluate his situation as stated

above, for he is the only one who has the knowledge, be it intuitively, of the relationship between the objectives of the self-imposed task and his actual knowledge at any given point in time (Huart, 1978).

Painchaud and LeBlanc (1984) have referred to some recent research on self-teaching and on self-directed learning (Serre, 1978; Tough, 1979; Tremblay, 1983) that throws an interesting light on self-assessment. When a learning situation does not include an appointed evaluator, different in that from the normal classroom set-up, the learner uses various means to evaluate his learning: peers' or experts' judgments, use of grids where available, trials in real-life situations, etc. It is as if the learner were collecting information that he will have to analyse before deciding whether his learning has been successful or not given his previously established objectives. Since he takes the trouble to collect all this data, it seems highly probable that the learner will be influenced by his findings provided his interpretation of the situation is accurate. This research does not concern language, however, and the question remains largely unanswered for this very complex activity.

As far back as ten years ago, Upshur (1975) was suggesting that students were able to give a pretty accurate assessment of their ability with the language. But as indicated by Fellenz, "While a number of adult educators have pointed out to self-evaluation of the learner as vital, few have offered any definite or practical suggestions for the implementation of a self-evaluation approach." Van Passel (1974), Oskarsson (1978) and others used self-assessment questionnaires to allow their students to pass judgment on their own knowledge, and it became obvious that this would be the most efficient way of getting satisfactory results. This comes from the fact that in preparing a questionnaire, all those taking part in the learning/teaching process must get involved in order to clearly establish the relationship between the objectives of either the institution and/or the learner and the content of the self-assessment questionnaire. So when we got involved in the project that was to lead to placement by self-assessment, it seemed obvious that this was the route to follow.

Research Description

There were a number of questions that had to be answered satisfactorily in our minds before the change referred to above could be attempted. The first one concerned the very ability of first year university students to assess their level of performance in the second language through a self-assessment questionnaire. Then there was that of the quality of the questionnaire itself and of how (and whether) it could be improved. Finally we had to find out what the real effects of using a self-assessment questionnaire for student placement would be. These questions were the basis for the three parts of the research that will now be described.

First Research (1981)

The question underlying the first part of the research was that of the ability of the students to assess their level of proficiency in their second language. In order to collect the needed data, we randomly selected 200 students of French as a second language and 200 students of English as a second language as they came on registration day to write the compulsory *Proficiency Test* of the Centre for Second Language Learning in either French or English. These tests are standardized three-part tests that include a section on listening, one on reading and a cloze. They are used to establish the proficiency level of the new students entering the University of Ottawa for certification purposes.

At the beginning of the test session, the chosen students were asked to first fill out a four part *Self-Assessment Questionnaire* dealing with each of the four skills. They then took the *Proficiency Test.* The items used in the questionnaire were graded for each skill and had the following form, for instance in "listening":

> I understand information containing figures (course codes time-table, addresses, phone numbers, prices, etc.)
>
> I understand the usual terms of my field of specialization or interest.
>
> I understand a normal conversation even when my presence is not taken into account.

For each of these statements, the participants were asked to give themselves a mark on a scale of 1 to 5, a 1 score meaning "I cannot do that at all" and a 5 score "I can do that all the time." Since there were 40 items, the total low score was 40 while the total high score was 200. The total scores on the *Self-Assessment Questionnaire* were then correlated with the total scores on the *Proficiency Test.* Correlations were also established between each of the three sub-tests of the *Proficiency Test* and the four parts of the *Self-Assessment Questionnaire.* The results for both the correlations between total scores and correlations between sub-tests are presented in Table 1 and Table 2.

TABLE 1

Correlations Between Total Test Score and Self-Assessment

	Test Total
Self-Assessment, Listening	.43
Self-Assessment, Reading	.53
Self-Assessment, Speaking	.39
Self-Assessment, Writing	.50
Self-Assessment, Total	.53

All results are significant at the .05 level

TABLE 2

Correlation Matrix by Sub-Test

	T L	T R	T C	S-AL	S-AR	S-AS	S-AW
Test, Listening	1.0						
Test, Reading	.63	1.0					
Test, Cloze	.57	.85	1.0				
S.-Assess. Listening	.52	.37	.38	1.0			
S.-Assess. Reading	.47	.49	.49	.75	1.0		
S.-Assess. Speaking	.50	.41	.38	.75	.70	1.0	
S.-Assess. Writing	.42	.47	.50	.63	.72	.72	1.0

Legend: T L = Test, Listening; T R = Test, Reading; etc.

All correlations whose absolute values are > .34 are simultaneously significant at the .05 level

A total correlation score of .53 was in line with the .50 correlation found by Oskarsson (1978) and showed that the students could indeed assess their own knowledge of the language. It was felt, however, that if some improvement could be made of the instrument, the results could be better. We then decided to conduct a second experiment with particular

attention being paid to the form of the questionnaire and its relation to the stated objectives of the language program.

Second Research (1983)

There were two main questions underlying the second part of the research: 1) Does the manner in which the statements are formulated regarding an identical task have an effect on the results? 2) Can the results be improved by providing the students with instruments more closely related to their situation as potential second language users? To try to find answers to these questions, it was first decided that the same general procedure would be followed, that of obtaining and correlating two sets of results, that of the *Self-Assessment Questionnaire* and that of the *Proficiency Test.* It was also decided to bring the *Self-Assessment Questionnaire* more in line with the second language requirements of the institution by limiting it to the receptive skills.

The instrument was made up of blocks of items consisting of one general statement followed by five graded situations referring to the statement. For instance, in "reading":

> I could understand the following texts in my field of specialization if they were written in French:
>
> 1. a course description
> 2. the instructions concerning the work to be done in a course
> 3. the table of contents of a textbook
> 4. an annotated bibliography
> 5. exam questions

Once again, the students were asked to give themselves a score between 1 and 5 for each number. The listening part was made up of six blocks (30 questions) and the reading part of four blocks (20 questions). The low and high scores were thus 50 and 250.

In order to assess the possible effects of the format of the questionnaire, it was decided that two questionnaires would be used. The first one, Questionnaire A, was built with a communicative description of the language in mind using as a reference Munby's *Communicative Syllabus Design* (1978). A block in listening would therefore look like this:

> I can understand the implicit meaning of a spoken message when the speaker
>
> 1. indicates his disagreement by using turns such as "I agree, but..."
> 2. suggests a cause and effect relationship without using words such as "consequently, therefore, etc."
> 3. seems to be asking a question but is really giving a polite order ("Could you call Mary? Is the window open?")

4. uses figures of speech such as metaphors ("A storm of protest," etc.)
5. says one thing but where the situation is changing the meaning of what is being said ("What a lovely day" when it is raining hard).

The questionnaire built on that model aimed at establishing the possible effects of the use of metalinguistic language on the ability to assess one's own level of proficiency in the language.

As for Questionnaire B, it was built from situations a student was likely to encounter in his university life. An example in "listening":

I could understand the following information given orally in French by a member of personnel or by another student:

1. how to locate books or documents at the library or the bookstore
2. how to find my way around campus
3. how a course is organized and what work is required
4. how to operate audio-visual equipment (language lab, movie projector, etc.)
5. How to register

Both questionnaires were distributed randomly as the students entered the test room and, as in the first experiment, they were asked to fill out the *Self-Assessment Questionnaire* first and they were then given the *Proficiency Test.* It was also decided to increase considerably the size of the experiment; therefore, the number of students examined was as follows for each of the forms of the questionnaire:

Questionnaire A, French as L2	N= 861
Questionnaire B, French as L2	N= 878
Questionnaire A, English as L2	N= 662
Questionnaire B, English as L	N= 660

The results of the analysis of all the scores were similar for both French and English as L2 so only the results for French will be shown here in Table 3 and Table 4.

As can be seen from these results, the answer to the question regarding the possible improvement of the correlations that might follow the use of an instrument which takes into serious consideration the actual situation of the students in relation to their language use was an emphatic yes. The correlations climbed to the level of 0.80 and of 0.82 respectively. On the other hand, where it had been felt that the formulation of an item might have some bearing on the results, the correlations did not show any significant differences either for French or for English. This result led to the conclusion that form is not an important factor in the writing of items provided the students have the background to understand what is actually expected from them.

Table 3

Correlations Between the Proficiency Test Results and the Self-Assessment Questionnaire (Questionnaire A)

	Test Listening	Test Reading	Test Cloze	Test Total
Self-Assess. Listening	0.78	0.69	0.71	0.79
Self-Assess. Reading	0.74	0.70	0.72	0.78
Self-Assess. Total	0.78	0.71	0.73	0.80

The results are significant at the 0.0001 level

Table 4

Correlations Between the Proficiency Test Results and the Self-Assessment Questionnaire (Questionnaire B)

	Test Listening	Test Reading	Test Cloze	Test Total
Self-Assess. Listening	0.81	0.69	0.73	0.80
Self-Assess. Reading	0.76	0.70	0.73	0.79
Self-Assess. Total	0.80	0.71	0.74	0.82

The results are significant at the 0.0001 level

With the combined results of the 1981 and the 1983 research showing that self-assessment could be counted on as a reliable tool in the fields of second language teaching and testing, the stage was set for the use of a self-assessment questionnaire as the sole means for placing students in second language groups.

Third Research (1983-84)

The first step of this research was to involve the language teachers in the establishment of a description of the various levels of proficiency, the aim, for institutional reasons, being descriptions for six different terminal levels starting with real beginners. The language teachers were thus asked

to write descriptors that they felt were representative of each of the six levels in both listening and reading. A descriptor could take the form of "Can understand a phone number" (level 2), or "Can distinguish between preterit and present perfect" (level 3) or any other form. The exercise produced well over one thousand descriptors and showed that the concept of level could vary considerably from one teacher to the other. It was possible, however, by using the descriptors proposed most often, to establish a rough picture of what each level should be like.

From this rough sketch, a group of specialists worked out a matrix that could be used as the basis for the descriptions of all levels. The matrix took into consideration such components as the types of texts, the genres, the registers, the length, the norm, and the types of presentation (speed, repetitions, etc.) on the one hand, in relation to, on the other, a number of operations such as the development of specific abilities, retention, critical listening at the identification level (who is speaking, in what tone, etc.) and critical listening at the evaluation level (draw conclusions, decide what to do, etc.).

This complex exercise produced descriptive components that made up the various levels and supplied the self-assessment questionnaire developer with the formal material needed to formulate items that could actually be used by the students. For instance, where the matrix showed that a student at level two was expected to be able to understand, in a dialogue of the social conversation genre between two students at the familiar register and spoken at regular speed, the topic of the conversation with one or two details, it is obvious that this wording could not be used for the students with any chance of success. And so, part of the questionnaire elaboration became the "translation" of the various level descriptors into items dealing with real life situations. The items were tried in a few classes where the students seemed to answer the description of a given level and, when successful, became part of the placement questionnaire.

The experimental instrument was a 60 item questionnaire, 36 of which dealt with listening and 24 with reading. Once again, the students were asked to give themselves a score between 1 and 5 and each score was accompanied by a short descriptor: 1 = never; 2 = seldom; 3 = half the time; 4 = often; 5 = always. The items had the following format:

When people speak foreign languages around me, I can tell those using French
I understand questions in French about my name, my address, my phone number
As long as the professor is willing to repeat once in a while, I can understand the directives given in French in class

I am sufficiently fluent in French to understand most of the popular expressions used by today's teenagers

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If the menu at the cafeteria is written only in French, I can order knowing what I will be eating
In a 2-3 page text, I can find the details that I need to answer specific questions
I can read an editorial in French and determine the areas of agreement and disagreement between the author's views and mine

This experimental version was tried out at the beginning of the May and of the July sessions. Items were then analysed in terms of their predictive value and a final version was prepared for the September 1984 registration where the Centre for Second Language Learning had to place upwards of 2,500 students in its various groups. It has since then also been used in the same form for the January 1985 registration.

Since the *Self-Assessment Questionnaire* was the only placement instrument used (as opposed to the other instances where a questionnaire was used together with the *Proficiency Test*), the results obtained have to be discussed in terms of the quality of placement the *Self-Assessment Questionnaire* provided. In order to be able to do this, data for each of the 1983-84 registrations (4 in all) was compiled in terms of number of changes that were taking place after the first placement by the *Proficiency Test*. It was then possible to compare these numbers with those that occurred following the first placement using the *Self-Assessment Questionnaire*. Table 5 shows a comparison of those figures:

Table 5

Percentage of Changes from Initial Placement: 1983/84 and 1984/85

	1983-84 Prof. Test	1984-85 Self-Asess.
May Session	15.6%	11.9%
July Session	15.1%	11.6%
Fall Session	16.3%	13.3%
Winter Session	15.8%	14.3%

A few words are now in order about those changes. In the system used at the Centre for Second Language Learning, students are first placed by a test of some sort and sent to a teacher according to the test results. The teachers then do further testing to make sure that all of the students in the group have been correctly placed. When there have been mistakes, students are changed from one group to another. These are the changes being referred to here. It must be pointed out, however, that the number of changes recorded includes not only the students that were incorrectly placed, but also all other causes of changes: students wanting to be in another group with a friend, changes because groups are never so homogeneous that one cannot find students that might not exactly belong, changes because there are too many students in the group according to the professor's "standards," etc. All these reasons tend to explain what might appear to be a high percentage of changes (although a 15% figure is certainly not unheard of in other institutions). But since the same situations would occur whatever the placement instrument used, it was felt that all changes could be put together, regardless of the causes, and that the above comparisons were thus legitimate.

One last remark about Table 5 concerns the Winter Session results. While there was an increase in the percentage of changes at the beginning of that particular session, these numbers can be explained by the fact that for the first time, because of budgetary restrictions, all students could not be admitted. This produced situations where, in certain timetables, there were not enough students to put together a homogeneous group. Groups were nevertheless formed that had to be changed afterwards. There is no reason to believe that the *Self-Assessment Questionnaire* performed less well than on the other occasions.

The preliminary conclusion arrived at from all this was that self-assessment would continue being used as the sole placement instrument at the Centre. There are many reasons for this. First and foremost is the fact that placement using this approach is at least as good as what was being achieved using the standardized *Proficiency Test*. Then, the fact that self-assessment does not create any security problem also enters into play. A self-assessment questionnaire can be taken home and filled out at the candidate's leisure. This eliminates the setting up of tight testing schedules since the student can walk in and out of the room as he becomes available. And while taking the *Proficiency Test* used to take over one hour and thirty minutes, answering the *Self-Assessment Questionnaire* takes approximately twenty minutes. Finally, in a student-centered approach, it makes a lot of sense to put the student squarely on the spot and ask him to say what his level of proficiency is and consequently what his needs might be. A language teacher who has in hand

the self-assessment of a second language student has at his disposal a very useful document from which to build a truly student-centered program.

In its present form, and although it already marks a significant improvement over the previous situation, the Self-Assessment Questionnaire needs revision in at least two areas. First, a formula must be found that will better tell students what is expected from them and why it is felt they can do it. Some students still object to the idea that the evaluation is not done by someone in authority, someone "who knows." And so, while they accept to answer the questionnaire, it remains to be seen whether they are giving it their best effort. It is therefore very important that this problem be solved if results are to be improved.

The second area of needed improvement is that of the predictive quality of items for students at the "intermediate" level. All tests place poorly at that level, the main reason being that it is very difficult to give a workable definition of both the level and the student who is supposed to belong to it. The scores these students get on placement tests are an aggregate from a variety of sources that differ from one student to the other. Self-assessment should provide means to better describe the "intermediate" situation but, as in any other testing work, items have to be built and tried out before the best ones become part of a finely tuned instrument.

Self-assessment is now being used as a placement test with good results in instances where the students would not gain by overevaluating or underevaluating their proficiency level. In such situations, self-assessment involves the student in the whole learning process and provides the teacher with much valuable information. Having said this and because of self-assessment's intrinsic value, this approach should not be summarily excluded from all the other decision making dimensions of evaluation. In many cases, one could benefit from its input by simply adding a short standardized control. This area does seem to present some interesting aspects for future research.

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Cross-Cultural Variability in Conversational Interactions

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Introduction

Whenever speakers with different native languages attempt a conversation, there are some inevitable and quite predictable areas of potential misinterpretation. Traditionally, these areas of interference have been analyzed as resulting from an insufficient understanding of syntactic, phonological, or semantic structures. It has only been recently that instructors and researchers in second language acquisition have looked to the area of socio-and psycholinguistics—and that these "cultural differences" have been more finely examined and, in some cases, recategorized entirely.

Indeed, a mere contrastive analysis on structural lines is insufficient to account for the potential for error in message comprehension. Conversation is a cooperative endeavour, subject to systematic constraints. Although suprasegmental and other surface features of speech are certainly crucial to the understanding of an interaction, comprehension also depends on the proper identification of interpretative frames and other verbal and non-verbal contextualization cues. For example, linguistic errors made by second language learners (e.g. tense) can sometimes be traced to the inability of maintaining topic-related continuity. Episodic and extralinguistic details are often distractions. In order to be competent communicators, both speakers and listeners must share a common framework at both a superficial and a deeper level for true communication to occur.

Thus, the purpose of this paper is to examine some of the pertinent sociolinguistic research findings regarding the realm of conversational interaction or cross-cultural verbal discourse interface factors. Wherever possible, the variations of speech behaviour among L2 speakers will be

related to problems in acquisition and/or communicative competence.

The notion of communicative competence involves both productive and receptive abilities to encode and decode meaning. Meaning is not fixed. It is a function of the dynamic patterns of utterances and responses as they occur in conversation. Speakers negotiate meaning, often with "scripts" or plans in mind, within an (assumedly shared) cultural framework. They use both verbal and non-verbal skills and strategies such as turn-taking techniques (rules governing the change of speakers); tying phenomena (how speakers establish semantic relations between utterances); asides and side sequences; ways of controlling and channeling the course of an utterance through interjections; and ways of opening and closing conversations (Gumperz, 1977). All these strategies are employed in particular contexts and with both receiver and producer making assumptions about roles, status, topic control and formality.

These strategies are, in short, very culture specific yet often unrecognized by the learner as being such. It is part of a teacher's responsibility to take this into consideration and to foster awareness of the strategies in use within the cultural framework of the language s/he is teaching. Even if the learner's ability to communicate appropriately is not significantly improved, at least the level of frustration may be decreased with the understanding (appreciation?) that possible cultural mismatches in the communication process can and do occur.

Presuppositions, Expectations, Predictions

All speakers bring a complex set of presuppositions and expectations to even the simplest of speech encounters. These are very likely to be unconscious, yet strongly influential on the success of the encounter. Indeed, what is often left *un*said may also be a crucial element of the interpretation. Note, for example, the expectation that the North American maxim "Be informative" will be followed. In Malagasy society, on the other hand, the expectation is that the individual will *not* be informative, depending on socially relevant features of the interactional setting. Obviously, if two such language groups were to meet, the listener's attitude as to the speaker's manner and character would be based on the judgments generated by such underlying values of information-sharing: Is he brusque or reserved? sneaky or careful? tight-lipped or discreet? Other similarly underlying expectations, and therefore interpretations, may hinge on perceptions of status, topic, turn-taking rules, rituals and codes. (These will be detailed later.) The point to be made here is that a second language encounter carries a complex and often inexplicable expectation load.

The Social Values of Language

Language obviously expresses meaning and intentions, but it also carries social import. The value of speaking itself varies interculturally and even intraculturally when co-varied with sex, age, or participant status. For example, in North America an older person is not generally expected to go through a long ritual when greeting or taking leave of a child. In Luo society, genealogical structure is created by means of a conversation among village elders. In other societies, silence itself may have more value than verbal interchange, (e.g. 17th century Quakers, or present day Cuna Indians of Panama).

Sex-determined roles may also affect language style and social value. In Malagasy, for example, men speak the "proper" or "ideal" code (very polite and formal), while women speak the "improper" or the norm. The interplay between these two types reflects the ideal and actual cultural ground rules for performance. Interestingly enough, although the speaking of women is formally devalued, it is nevertheless socially valued and a strategic social resource since women get away with direct, sometimes abusive, but honest social criticisms which keep group members in line (Keenan, 1974).

In English-speaking groups it's not so much a question of valued vs. devalued speech as determined by sex, but rather the lexical appropriacy of the language used by each, (e.g. a man doesn't usually say "What a darling suit!" nor a woman "Hiya, big guy, how the hell are ya?"—although times are changing). Linguistic models for non-native speakers are too complex to explain with any precise rules. The carefully neutral dialogues presented for second language pedagogy are often boring and uninformative to native and non-native speakers alike for this very reason. Included with appropriacy are such notions as forms of address. Again, these are very much dependent on class, sex, situation and setting as well as the personality of the participants themselves. Some societies incorporate these different forms of address within the structure of the language itself (Japanese and Korean), while others include them in the registers and formalized expressions used in address (in French, German, English). Sensitivities of proper formality are often violated in cross-cultural interactions.

Social class too will, of course, affect formality. There is, for example, a difference between the restricted communication code of the lower class which is used among a closely-knit group with shared assumptions, and the elaborated code of the middle-class which can be used to communicate information to strangers (Rosch, 1977). Dialect users follow a similar pattern, speaking the dialect within the community and the standard form with outsiders (Gumperz, 1970). In both cases, one lan-

guage system carries a preferred intimacy level and hence a decreased formality load.

Styles of Presentation

Styles of presentation vary considerably within and among groups. Participant cooperation often varies with the given-new contracts. Underlying assumptions which are not verified must then force either the speaker or the listener to reformulate or re-evaluate the message.

Uncertainty as to a newcomer's status is reflected by a native's use of certain speech styles. Consider the examples presented by Beck (1979) on the reactions of some middle class southerners in the U. S. (Atlanta, Georgia) to middle class foreign workers. Until the status was equalized (and deformalized) over time, the southerners adopted the role of an adult addressing a child with the concomitant implication of higher to lower status. "Interestingly, the foreigners observed in this study did not acquiesce. They did not respond with expected speech behaviour. Rather, they attempted to communicate with southerners as equal status peers.... In the process of speaking with one another for the first time, ...southerners and foreigners created social relationships where none previously existed" (Beck, 1979). (Many native speakers adopt the simplification strategy in grammatical as well as social forms.)

Another element of speech acts is the establishment and appropriate use of phatic communion between participants which seems to establish and consolidate their interpersonal relationship. This often occurs in rituals such as leave-taking ("Remember me to your mother."), and may co-vary with formality and register. Phatic communion seems to ease the transition to and from such use for fear of overstepping only dimly understood social boundaries. Or, of course, they might use them where restrictions of formality would normally not allow.

Differences in overlapping and turn-taking also occur. In many English-speaking groups there are clear verbal and non-verbal cues as to when a speaker may or may not be interrupted: i.e., by maintaining the floor with "un" or "um," for example, or by not returning the listener's polite gaze until ready to relinquish speaking. In Antigua, on the other hand, a "conversation" may consist of many voices speaking out at once, with the loudest holding the floor at any one moment and the others not waiting for, but fighting for, their turn (Reisman, 1974). Of course, what would seem to be oral bedlam and perhaps rudeness to the English speaker are merely normal conversational strategies for the Antiguan.

Non-verbal behaviour (kinesic interaction) plays a strong role in conversational management. Eye gazing shifts, body shifting at prosodic

junctions, changes in interpersonal distance ("proxemic shifts"), all seem to accompany changes in topic, speaker, or the social relationship between the speakers. There is more proxemic stability in intraethnic encounters than in interethnic encounters, as evidenced by the number of false starts that occur between L1-2 speakers. It has been suggested that emic segmentation of interaction according to proxemic cues may be a human universal (Erickson, 1975).

Examples of unexplained discomfort on the part of one of the participants and hence inattention to the message, hesitations, or abrupt leave-taking may be explained as reactions to a distancing problem. Misinterpretations regarding intentions may spring from such non-verbal behaviour instead of simply from poor comprehension.

The closeness of Arabic speakers versus the usual distancing between English speakers in business negotiations, or the relative stillness of some Indian speakers compared to the more volatile movements accompanying the speech of some Romance language speakers are only two of many examples of such proxemic differences. Other more subtle gestures may include leaning back in a chair, sitting casually on a desk, or standing somewhat "at attention," all of which may signal formality boundaries, status assumptions, or shifting or terminating of topics or conversations. Appropriate verbal responses to these and other speech act elements are reliant on fairly firm notions of culturally-based procedures.

Codes and Rituals

Every language group has a system of codes and rituals which are well-known and easily recognizable (if not explicable) by speakers of that group. (Within any group of language users, of course, one could also subcategorize on the basis of class, sex, age, and so on.) Codes and rituals exist for such language functions as greetings, leave-taking, lecturing, story-telling, preaching, philosophizing, insulting, and joking.

A community's system of speech institutions and events constitutes the structured matrix within which speaking occurs in that community. Giving shape to these scenes as they are enacted, and underlying the dynamics of communicative activity within them, are sets of general cultural themes and social-interactional organizing principles, which may be seen from the point of view of the ethnography of speaking as the implicit or explicit ground rules for performance. Such ground rules are only analytically separable from the speech activities themselves (Bauman and Sherzer, 1974).

Even native speakers do not possess equal proficiency in the use of

these codes. Consider, for example, the difficulty some speakers have in finding the proper formulaic expressions to offer while attempting to politely but firmly take leave. (Of course, sometimes the difficulty is due to the other participant's lack of competence in responding to the signals.)

The effusiveness of greetings vary tremendously among speakers, the appropriacy determined by the closeness of the relationship (or temporary perceived closeness as in a political rally party), by the topic, the setting, and the age and sex of the participants. The L2 speaker will most likely maintain his own standards in such situations, or perhaps choose from his limited repertoire of learned formulaic expressions which may or may not be appropriate. This is especially true if the interaction is solely oral and there are no visual cues to aid in the selection of responses. Daniele Godard (1977), a French speaker, describes her own reactions ("irritated," "insulted," "amused") to phone calls in the United States. The ring of the telephone call is an instance of a summons-answer sequence, a conversational opening device "which, alone, suffices to establish and align the roles of speaker and hearer as a result of certain cultural assumptions." The rules for making a phone call in France include: 1) check number, 2) excuse yourself, 3) name yourself, 4) ask for your friend. The underlying premise in answering is based on following the format of an introduction, whereas in the U.S., the answer (if not the party requested) is treated merely as a conduit and often ignored. Godard concludes: "...it appears that the rules governing telephone calls cannot be understood unless they are placed within a larger system of interaction which distributes different roles to different means of communication with the other members of the community, a system which one expects to be itself determined by technical and geographical constraints on the one hand, and cultural values and attitudes on the other" (Godard, 1977:209-219).

No community or individual is limited to a single variety of code, but rather includes a range of elements such as linguistic repertoire, a code matrix (i.e., codes and subcodes, including language dialects and registers), code components (channel, setting, participants) which are factored into relevant features, variations in variable functions of speech, and the structure (phonological, syntactic, semantic) of linguistic variations within a community.

The systematic nature of codes is well-documented, especially in rites which maintain the social order. One interesting example where speakers maintain a structural competence in communicative behaviour which is not strictly linguistic is that of the Gbeya of West Africa. They have a definite structure for well-formed insults consisting of a personal chal-

lenge, a derogatory body-part comment, and a simile; the challenge may be at the beginning or end of an insult but not in both places (Shuy and Fasold, 1972).

A somewhat looser structural competence in communication is the knowledge which speakers have of well-formed narratives. Labov's work in New York with Black and Puerto Rican adolescents has shown definite structural components in story-telling, primarily aimed at priming, testing, and summarizing for the audience, and includes an evaluation of the narrative by the speaker himself (Shuy and Fasold, 1972).

In general, codes and rituals serve a more functional and social purpose than that of relaying new information. They are useful within society in that they help to integrate and maintain the speaker in the group. Non-native speakers who do not know the codes or use them inappropriately will—even unconsciously —be judged as inefficient in the communicative task. A person may have every intention of avoiding cultural bias, yet by subconsciously superimposing his own interpretation on the verbal performance, he may nevertheless bias his judgment of their personal ability, efficiencies, etc. (Gumperz, 1970).

Conclusion: Some Words On L2 Acquisition

One final aspect of oral discourse interference may relate to the type of L2 accquisition process itself. Impressions of the foreign language are often well ingrained by the manner of pedagogical presentation and/or natural acquisition. Other components include the attitude of the instructor and the availability of the appropriate social and functional models as well as structural forms. The type of L2, its formality, registers, elaborateness, code systems, and the interest with which all this is presented all serve to colour the learner's perceptions, such that his competence will echo these nuances and affect his successful communicative interaction with native speakers.

Second language learners can benefit from a type of contrastive discourse analysis to become aware of cross-cultural differences and similarities in the ritual strategies of speech acts. Acquiring a repertoire of such semantic strategies will decrease their distractibility to their listeners and help focus attention on their message rather than on how poorly (structurally) or inappropriately (functionally) it may have been delivered. The psycholinguistic ability involved in using linguistic choices to signal social psychological information is (shown to be) teachable in an instructional context, and is measurable (Jakobovits, 1981).

An instructor cannot possibly teach *all* the varieties and social functions of a foreign language, but s/he *can* and should ensure a sense of the

rich variability and the potential areas of misinterpretation. Awareness, even more than correctness, will help the L2 learner to acquire a fuller repertoire and prepare him for conversational encounters.

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